PERMIT #66039
PLACE ID #5129

PERMITTEE: **Freeport-McMoRan Miami, Inc.**
FACILITY: **FMMI Smelter**
PERMIT TYPE **Class I Air Quality Permit**
DATE ISSUED:
EXPIRY DATE:

SUMMARY

This Class I (Title V) permit is issued to Freeport-McMoRan Miami, Inc. (FMMI), the Permittee, for the continued operation of its copper smelting facility located off of Hwy 60 in Claypool Arizona. This is a renewal of Permit #53592.

The FMMI ~~a~~ copper smelting facility consists of an IsaSmelt® Furnace; an Electric Furnace; four (4) Hoboken Converters; two (2) Anode Furnaces; a Utility Vessel; an Electrolytic Refinery; a Rod Plant; an Acid Plant; and other support equipment.

The facility is classified as a "major source" pursuant to A.A.C. R18-2-101.75 because the potential emission rates of the following pollutants are greater than the Class I major source thresholds: (i) particulate matter with an aerodynamic diameter less than 10 microns; (ii) sulfur dioxide; (iii) nitrogen oxides; (iv) carbon monoxide; and (v) hazardous air pollutants.

This permit is issued in accordance with Arizona Revised Statutes (ARS) 49-426. It contains requirements from Title 18, Chapter 2 of the Arizona Administrative Code (A.A.C.) and Title 40 of the Code of Federal Regulations (CFR). All definitions, terms, and conditions used in this permit conform to those in A.A.C. R18-2-101 *et seq*., and Title 40 of the CFR, except as otherwise defined in this permit.

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ATTACHMENT "A": GENERAL PROVISIONS

I. PERMIT EXPIRATION AND RENEWAL

[ARS § 49-426.F, A.A.C. R18-2-304.D.2, and -306.A.1]

A. This permit is valid for a period of five (5) years from the date of issuance.

B. The Permittee shall submit an application for renewal of this permit at least six (6) months, but not more than eighteen (18) months, prior to the date of permit expiration.

II. COMPLIANCE WITH PERMIT CONDITIONS

[A.A.C. R18-2-306.A.8.a and b]

A. The Permittee shall comply with all conditions of this permit including all applicable requirements of the Arizona Revised Statutes (A.R.S.) Title 49, Chapter 3, and the air quality rules under Title 18, Chapter 2 of the Arizona Administrative Code. Any permit noncompliance is grounds for enforcement action; for permit termination, revocation and reissuance, revision; or for denial of a permit renewal application. In addition, noncompliance with any federally enforceable requirement constitutes a violation of the Clean Air Act.

B. It shall not be a defense for a Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

III. PERMIT REVISION, REOPENING, REVOCATION AND REISSUANCE, OR TERMINATION FOR CAUSE

[A.A.C. R18-2-306.A.8.c, -321.A.1 and A.2]

A. The permit may be revised, reopened, revoked and reissued, or terminated for cause. The filing of a request by the Permittee for a permit revision, revocation and reissuance, termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition.

B. The permit shall be reopened and revised under any of the following circumstances:

1. Additional applicable requirements under the Clean Air Act become applicable to the Class I source. Such a reopening shall only occur if there are three or more years remaining in the permit term. The reopening shall be completed no later than 18 months after promulgation of the applicable requirement. No such reopening is required if the effective date of the requirement is later than the date on which the permit is due to expire, unless the original permit or any of it terms and conditions has been extended pursuant to A.A.C. R18-2-322.B. Any permit revision required pursuant to this subparagraph shall comply with the provisions in A.A.C. R18-2-322 for permit renewal and shall reset the five-year permit term;

2. Additional requirements, including excess emissions requirements, become applicable to an affected source under the acid rain program. Upon approval by the Administrator, excess emissions offset plans shall be deemed to be incorporated into the Class I permit;

3. The Director or the Administrator determines that the permit contains a material

mistake or that inaccurate statements were made in establishing the emissions standards or other terms or conditions of the permit; and

4. The Director or the Administrator determines that the permit needs to be revised or revoked to assure compliance with the applicable requirements.

C. Proceedings to reopen and issue a permit, including appeal of any final action relating to a permit reopening, shall follow the same procedures as apply to initial permit issuance and shall, except for reopenings under Condition III.B.1 above, affect only those parts of the permit for which cause to reopen exists. Such reopening shall be made as expeditiously as practicable. Permit reopenings for reasons other than those stated in Condition III.B.1 above shall not result in a resetting of the five-year permit term.

IV. POSTING OF PERMIT

[A.A.C. R18-2-315]

A. The Permittee shall post this permit or a certificate of permit issuance at the facility in such a manner as to be clearly visible and accessible. All equipment covered by this permit shall be clearly marked with one of the following:

1. Current permit number; or

2. Serial number or other equipment identification number (equipment ID number) that is also listed in the permit to identify that piece of equipment.

B. A copy of the complete permit shall be kept on site.

V. FEE PAYMENT

[A.A.C. R18-2-306.A.9 and -326]

The Permittee shall pay fees to the Director pursuant to ARS § 49-426(E) and A.A.C. R18-2-326.

VI. ANNUAL EMISSION INVENTORY QUESTIONNAIRE

A. The Permittee shall complete and submit to the Director an annual emissions inventory questionnaire. The questionnaire is due by March 31st or ninety (90) days after the Director makes the inventory form available each year, whichever occurs later, and shall include emission information for the previous calendar year.

[A.A.C. R18-2-327.A]

B. The questionnaire shall be on a form provided by the Director and shall include the information required by A.A.C. R18-2-327.B.

[A.A.C. R18-2-327.B]

VII. COMPLIANCE CERTIFICATION

[A.A.C. R18-2-309.2.a, -309.2.c-d, and -309.5.d]

A. The Permittee shall submit a compliance certification to the Director twice each year, which describes the compliance status of the source with respect to each permit condition. The first certification shall be submitted no later than April 15th, and shall report the compliance status of the source during the period between September 1st of the previous year, and February 28th or 29th of the current year. The second certification shall be

submitted no later than October 15th, and shall report the compliance status of the source during the period between March 1st and August 31st of the current year.

B. The compliance certifications shall include the following:

1. Identification of each term or condition of the permit that is the basis of the certification;

2. Identification of the methods or other means used by the Permittee for determining the compliance status with each term and condition during the certification period,

3. Status of compliance with the terms and conditions of the permit for the period covered by the certification, including whether compliance during the period was continuous or intermittent. The certification shall be based on the methods or means designated in Condition VII.B.2 above. The certifications shall identify each deviation and take it into account for consideration in the compliance certification;

4. For emission units subject to 40 CFR Part 64, the certification shall also identify as possible exceptions to compliance any period during which compliance is required and in which an excursion or exceedance defined under 40 CFR Part 64 occurred;

5. All instances of deviations from permit requirements reported pursuant to Condition XII.B of this Attachment; and

6. Other facts the Director may require to determine the compliance status of the source.

C. A copy of all compliance certifications shall also be submitted to the EPA Administrator.

D. If any outstanding compliance schedule exists, a progress report shall be submitted with the semi-annual compliance certifications required in Condition VII.A above.

VIII. CERTIFICATION OF TRUTH, ACCURACY AND COMPLETENESS

[A.A.C. R18-2-304.I and -309.A.3]

Any document required to be submitted by this permit, including reports, shall contain a certification by a responsible official of truth, accuracy, and completeness. This certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

IX. INSPECTION AND ENTRY

[A.A.C. R18-2-309.4]

Upon presentation of proper credentials, the Permittee shall allow the Director or the authorized representative of the Director to:

A. Enter upon the Permittee's premises where a source is located, emissions-related activity is conducted, or where records are required to be kept under the conditions of the permit;

B. Have access to and copy, at reasonable times, any records that are required to be kept under

the conditions of the permit;

C. Inspect, at reasonable times, any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit;

D. Sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with the permit or other applicable requirements; and

E. Record any inspection by use of written, electronic, magnetic and photographic media.

X. PERMIT REVISION PURSUANT TO FEDERAL HAZARDOUS AIR POLLUTANT STANDARD

[A.A.C. R18-2-304.D.3]

If this source becomes subject to a standard promulgated by the Administrator pursuant to Section 112(d) of the Act, then the Permittee shall, within twelve months of the date on which the standard is promulgated, submit an application for a permit revision demonstrating how the source will comply with the standard.

XI. ACCIDENTAL RELEASE PROGRAM

[40 CFR Part 68]

If this source becomes subject to the provisions of 40 CFR Part 68, then the Permittee shall comply with these provisions according to the time line specified in 40 CFR Part 68.

XII. EXCESS EMISSIONS, PERMIT DEVIATIONS, AND EMERGENCY REPORTING

A. Excess Emissions Reporting

[A.A.C. R18-2-310.01.A, B, and C]

1. Excess emissions shall be reported as follows:

   a. The Permittee shall report to the Director any emissions in excess of the limits established by this permit. Such report shall be in two parts as specified below:

      (1) Notification by telephone or facsimile within 24 hours of the time when the Permittee first learned of the occurrence of excess emissions including all available information from Condition XII.A.1.b below.

      (2) Detailed written notification by submission of an excess emissions report within 72 hours of the notification pursuant to Condition XII.A.1.a(1) above.

   b. The report shall contain the following information:

      (1) Identity of each stack or other emission point where the excess emissions occurred;

      (2) Magnitude of the excess emissions expressed in the units of the

applicable emission limitation and the operating data and calculations used in determining the magnitude of the excess emissions;

(3) Date, time and duration, or expected duration, of the excess emissions;

(4) Identity of the equipment from which the excess emissions emanated;

(5) Nature and cause of such emissions;

(6) If the excess emissions were the result of a malfunction, steps taken to remedy the malfunction and the steps taken or planned to prevent the recurrence of such malfunctions;

(7) Steps taken to limit the excess emissions; and

(8) If the excess emissions resulted from start-up or malfunction, the report shall contain a list of the steps taken to comply with the permit procedures.

2. In the case of continuous or recurring excess emissions, the notification requirements shall be satisfied if the source provides the required notification after excess emissions are first detected and includes in such notification an estimate of the time the excess emissions will continue. Excess emissions occurring after the estimated time period, or changes in the nature of the emissions as originally reported, shall require additional notification pursuant to Condition XII.A.1 above.

B. Permit Deviations Reporting

[A.A.C. R18-2-306.A.5.a and b]

The Permittee shall promptly report deviations from permit requirements, including those attributable to upset conditions as defined in the permit, the probable cause of such deviations, and any corrective actions or preventive measures taken. Where the applicable requirement contains a definition of prompt or otherwise specifies a timeframe for reporting deviations, that definition or timeframe shall govern. Where the applicable requirement does not address the timeframe for reporting deviations, the Permittee shall submit reports of deviations according to the following schedule:

1. Notice that complies with Condition XII.A above is prompt for deviations that constitute excess emissions;

2. Notice that is submitted within two working days of discovery of the deviation is prompt for deviations of permit conditions identified by Condition I.C of Attachment “B”; and

3. Except as provided in Conditions XII.B.1 and 2 above, notice that complies with Condition I.B of Attachment “B” is prompt for all other types of deviations. Any such deviations that occur during the semi-annual reporting period shall be clearly identified in the report required by Condition I.B of Attachment “B,” concurrent with the semi-annual compliance certification required by Condition VII of

Attachment "A".

C. Emergency Provision

[A.A.C. R18-2-306.E]

1. An "emergency" means any situation arising from sudden and reasonably unforeseeable events beyond the control of the source, including acts of God, that require immediate corrective action to restore normal operation, and that causes the source to exceed a technology-based emission limitation under the permit, due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include noncompliance to the extent caused by improperly designed equipment, lack of preventative maintenance, careless or improper operation, or operator error.

2. An emergency constitutes an affirmative defense to an action brought for noncompliance with technology-based emission limitations if Condition XII.C.3 below is met.

3. The affirmative defense of emergency shall be demonstrated through properly signed, contemporaneous operating logs, or other relevant evidence that:

   a. An emergency occurred and that the Permittee can identify the cause(s) of the emergency;

   b. The permitted facility was being properly operated at the time of the emergency;

   c. During the period of the emergency, the Permittee took all reasonable steps to minimize levels of emissions that exceeded the emissions standards or other requirements in the permit; and

   d. The Permittee submitted notice of the emergency to the Director by certified mail, facsimile, or hand delivery within two working days of the time when emission limitations were exceeded due to the emergency. This notice shall contain a description of the emergency, any steps taken to mitigate emissions, and corrective action taken.

4. In any enforcement proceeding, the Permittee seeking to establish the occurrence of an emergency has the burden of proof.

5. This provision is in addition to any emergency or upset provision contained in any applicable requirement.

D. Compliance Schedule

[ARS § 49-426.I.3]

For any excess emission or permit deviation that cannot be corrected within 72 hours, the Permittee is required to submit a compliance schedule to the Director within 21 days of

such occurrence. The compliance schedule shall include a schedule of remedial measures, including an enforceable sequence of actions with milestones, leading to compliance with the permit terms or conditions that have been violated.

E. Affirmative Defenses for Excess Emissions Due to Malfunctions, Startup, and Shutdown [A.A.C. R18-2-310]

1. Applicability

A.A.C. R18-2-310 establishes affirmative defenses for certain emissions in excess of an emission standard or limitation and applies to all emission standards or limitations except for standards or limitations:

a. Promulgated pursuant to Sections 111 or 112 of the Act;

b. Promulgated pursuant to Titles IV or VI of the Clean Air Act;

c. Contained in any Prevention of Significant Deterioration (PSD) or New Source Review (NSR) permit issued by the U.S. EPA;

d. Contained in A.A.C. R18-2-715.F; or

e. Included in a permit to meet the requirements of A.A.C. R18-2-406.A.5.

2. Affirmative Defense for Malfunctions

Emissions in excess of an applicable emission limitation due to malfunction shall constitute a violation. When emissions in excess of an applicable emission limitation are due to a malfunction, the Permittee has an affirmative defense to a civil or administrative enforcement proceeding based on that violation, other than a judicial action seeking injunctive relief, if the Permittee has complied with the reporting requirements of A.A.C. R18-2-310.01 and has demonstrated all of the following:

a. The excess emissions resulted from a sudden and unavoidable breakdown of process equipment or air pollution control equipment beyond the reasonable control of the Permittee;

b. The air pollution control equipment, process equipment, or processes were at all times maintained and operated in a manner consistent with good practice for minimizing emissions;

c. If repairs were required, the repairs were made in an expeditious fashion when the applicable emission limitations were being exceeded. Off-shift labor and overtime were utilized where practicable to ensure that the repairs were made as expeditiously as possible. If off-shift labor and overtime were not utilized, the Permittee satisfactorily demonstrated that the measures were impracticable;

d. The amount and duration of the excess emissions (including any bypass operation) were minimized to the maximum extent practicable during periods of such emissions;

e. All reasonable steps were taken to minimize the impact of the excess emissions on ambient air quality;

f. The excess emissions were not part of a recurring pattern indicative of inadequate design, operation, or maintenance;

g. During the period of excess emissions there were no exceedances of the relevant ambient air quality standards established in Title 18, Chapter 2, Article 2 of the Arizona Administrative Code that could be attributed to the emitting source;

h. The excess emissions did not stem from any activity or event that could have been foreseen and avoided, or planned, and could not have been avoided by better operations and maintenance practices;

i. All emissions monitoring systems were kept in operation if at all practicable; and

j. The Permittee's actions in response to the excess emissions were documented by contemporaneous records.

3. Affirmative Defense for Startup and Shutdown

a. Except as provided in Condition XII.E.3.b below, and unless otherwise provided for in the applicable requirement, emissions in excess of an applicable emission limitation due to startup and shutdown shall constitute a violation. When emissions in excess of an applicable emission limitation are due to startup and shutdown, the Permittee has an affirmative defense to a civil or administrative enforcement proceeding based on that violation, other than a judicial action seeking injunctive relief, if the Permittee has complied with the reporting requirements of A.A.C. R18-2-310.01 and has demonstrated all of the following:

(1) The excess emissions could not have been prevented through careful and prudent planning and design;

(2) If the excess emissions were the result of a bypass of control equipment, the bypass was unavoidable to prevent loss of life, personal injury, or severe damage to air pollution control equipment, production equipment, or other property;

(3) The air pollution control equipment, process equipment, or processes were at all times maintained and operated in a manner consistent with good practice for minimizing emissions;

(4) The amount and duration of the excess emissions (including any bypass operation) were minimized to the maximum extent practicable during periods of such emissions;

(5) All reasonable steps were taken to minimize the impact of the excess emissions on ambient air quality;

(6) During the period of excess emissions there were no exceedances of the relevant ambient air quality standards established in Title 18, Chapter 2, Article 2 of the Arizona Administrative Code that could be attributed to the emitting source;

(7) All emissions monitoring systems were kept in operation if at all practicable; and

(8) Contemporaneous records documented the Permittee's actions in response to the excess emissions.

b. If excess emissions occur due to a malfunction during routine startup and shutdown, then those instances shall be treated as other malfunctions subject to Condition XII.E.2 above.

4. Affirmative Defense for Malfunctions during Scheduled Maintenance

If excess emissions occur due to a malfunction during scheduled maintenance, then those instances will be treated as other malfunctions subject to Condition XII.E.2 above.

5. Demonstration of Reasonable and Practicable Measures

For an affirmative defense under Condition XII.E.2 or 3 above, the Permittee shall demonstrate, through submission of the data and information required by Condition 0 above and A.A.C. R18-2-310.01, that all reasonable and practicable measures within the Permittee's control were implemented to prevent the occurrence of the excess emissions.

XIII. RECORDKEEPING REQUIREMENTS

[A.A.C. R18-2-306.A.4]

A. The Permittee shall keep records of all required monitoring information including, but not limited to, the following:

1. The date, place as defined in the permit, and time of sampling or measurements;

2. The date(s) any analyses were performed;

3. The name of the company or entity that performed the analyses;

4. A description of the analytical techniques or methods used;

5. The results of analyses; and

6. The operating conditions as existing at the time of sampling or measurement.

B. The Permittee shall retain records of all required monitoring data and support information for a period of at least five (5) years from the date of the monitoring sample, measurement,

report, or application. Support information includes all calibration and maintenance records and all original strip-chart recordings or other data recordings for continuous monitoring instrumentation, and copies of all reports required by the permit.

XIV. REPORTING REQUIREMENTS

[A.A.C. R18-2-306.A.5.a and b]

The Permittee shall submit the following reports:

A. Compliance certifications in accordance with Condition VII of this Attachment.

B. Excess emission; permit deviation, and emergency reports in accordance with Condition XII of this Attachment.

C. Other reports required by any condition of Attachment "B."

XV. DUTY TO PROVIDE INFORMATION

[A.A.C. R18-2-304.G, H, and -306.A.8.e]

A. The Permittee shall furnish to the Director, within a reasonable time, any information that the Director may request in writing to determine whether cause exists for revising, revoking and reissuing, or terminating the permit, or to determine compliance with the permit. Upon request, the Permittee shall also furnish to the Director copies of records required to be kept by the permit. For information claimed to be confidential, the Permittee shall furnish an additional copy of such records directly to the Administrator along with a claim of confidentiality.

B. If the Permittee has failed to submit any relevant facts or has submitted incorrect information in the permit application, the Permittee shall, upon becoming aware of such failure or incorrect submittal, promptly submit such supplementary facts or corrected information.

XVI. PERMIT AMENDMENT OR REVISION

[A.A.C. R18-2-318, -319, and -320]

The Permittee shall apply for a permit amendment or revision for changes to the facility which do not qualify for a facility change without revision under Condition XVII below, as follows:

A. Administrative Permit Amendment (A.A.C. R18-2-318);

B. Minor Permit Revision (A.A.C. R18-2-319); and

C. Significant Permit Revision (A.A.C. R18-2-320)

The applicability and requirements for such action are defined in the above referenced regulations.

XVII. FACILITY CHANGE WITHOUT A PERMIT REVISION

[A.A.C. R18-2-317]

A. The Permittee may make changes that contravene an express permit term without a permit revision if all of the following apply:

1. The changes are not modifications under any provision of Title I of the Act or under ARS § 49-401.01(24);

2. The changes do not exceed the emissions allowable under the permit whether expressed therein as a rate of emissions or in terms of total emissions;

3. The changes do not violate any applicable requirements or trigger any additional applicable requirements;

4. The changes satisfy all requirements for a minor permit revision under A.A.C. R18-2-319.A;

5. The changes do not contravene federally enforceable permit terms and conditions that are monitoring (including test methods), record keeping, reporting, or compliance certification requirements; and

6. The changes do not constitute a minor NSR modification.

B. The substitution of an item of process or pollution control equipment for an identical or substantially similar item of process or pollution control equipment shall qualify as a change that does not require a permit revision, if it meets all of the requirements of Conditions XVII.A above and XVII.C below.

C. For each change under Conditions XVII.A and XVII.B above, a written notice by certified mail or hand delivery shall be received by the Director and the Administrator a minimum of 7 working days in advance of the change. Notifications of changes associated with emergency conditions, such as malfunctions necessitating the replacement of equipment, may be provided less than 7 working days in advance of the change~~,~~ as possible or, if advance notification is not practicable, as soon after the change as possible.

D. Each notification shall include:

1. When the proposed change will occur;

2. A description of the change;

3. Any change in emissions of regulated air pollutants; and

4. Any permit term or condition that is no longer applicable as a result of the change.

E. The permit shield described in A.A.C. R18-2-325 shall not apply to any change made under this Condition.

F. Except as otherwise provided for in the permit, making a change from one alternative operating scenario to another as provided under A.A.C. R18-2-306.A.11 shall not require any prior notice under this Condition.

G. Notwithstanding any other part of this Condition, the Director may require a permit to be revised for any change that, when considered together with any other changes submitted by the same source under this Section over the term of the permit, do not satisfy Condition XVII.A above.

XVIII. TESTING REQUIREMENTS

[A.A.C. R18-2-312]

A. The Permittee shall conduct performance tests as specified in the permit and at such other times as may be required by the Director.

B. Operational Conditions During Testing

Performance tests shall be conducted under such conditions as the Director shall specify to the plant operator based on representative performance of the source. The Permittee shall make available to the Director such records as may be necessary to determine the conditions of the performance tests. Operations during periods of start-up, shutdown, and malfunction (as defined in A.A.C. R18-2-101) shall not constitute representative conditions of performance tests unless otherwise specified in the applicable standard.

[A.A.C. R18-2-312.C]

C. Performance tests shall be conducted and data reduced in accordance with the test methods and procedures contained in the Arizona Testing Manual unless modified by the Director pursuant to A.A.C. R18-2-312.B.

[A.A.C. R18-2-312.B]

D. Test Plan

At least 14 working days prior to performing a test, the Permittee shall submit a test plan to the Director in accordance with the Arizona Testing Manual. This test plan must include the following:

1. Test duration;
2. Test location(s);
3. Test method(s); and
4. Source operation and other parameters that may affect test results.

[A.A.C. R18-2-312.D]

E. Stack Sampling Facilities

The Permittee shall provide, or cause to be provided, performance testing facilities as follows:

1. Sampling ports adequate for test methods applicable to the facility;
2. Safe sampling platform(s);
3. Safe access to sampling platform(s); and
4. Utilities for sampling and testing equipment.

[A.A.C. R18-2-312.E]

F. Interpretation of Final Results

Each performance test shall consist of three separate runs using the applicable test method.

Each run shall be conducted for the time and under the conditions specified in the applicable standard. For the purpose of determining compliance with an applicable standard, the arithmetic mean of the results of the three runs shall apply. In the event that a sample is accidentally lost or conditions occur in which one of the three runs is required to be discontinued because of forced shutdown, failure of an irreplaceable portion of the sample train, extreme meteorological conditions, or other circumstances beyond the Permittee's control, compliance may, upon the Director's approval, be determined using the arithmetic mean of the results of the other two runs. If the Director or the Director's designee is present, tests may only be stopped with the Director's or such designee's approval. If the Director or the Director's designee is not present, tests may only be stopped for good cause. Good cause includes: forced shutdown, failure of an irreplaceable portion of the sample train, extreme meteorological conditions, or other circumstances beyond the Permittee's control. Termination of any test without good cause after the first run is commenced shall constitute a failure of the test. Supporting documentation, which demonstrates good cause, must be submitted.

[A.A.C. R18-2-312.F]

G. Report of Final Test Results

A written report of the results of performance tests conducted pursuant to 40 CFR 63, shall be submitted to the Director within 60 days after the test is performed. A written report of other performance tests shall be submitted within 30 days after the test is performed. The report shall be submitted in accordance with the Arizona Testing Manual and A.A.C. R18-2-312.A.

[A.A.C. R18-2-312.A]

H. Extension of Performance Test Deadline

For performance testing required under Condition XVIII.A above, the Permittee may request an extension to a performance test deadline due to a force majeure event as follows:

[A.A.C. R18-2-312.J]

1. If a force majeure event is about to occur, occurs, or has occurred for which the Permittee intends to assert a claim of force majeure, the Permittee shall notify the Director in writing as soon as practicable following the date the Permittee first knew, or through due diligence should have known that the event may cause or caused a delay in testing beyond the regulatory deadline. The notification must occur before the performance test deadline unless the initial force majeure or a subsequent force majeure event delays the notice, and in such cases, the notification shall be given as soon as practicable.

   [A.A.C. R18-2-312.J.1]

2. The Permittee shall provide to the Director a written description of the force majeure event and a rationale for attributing the delay in testing beyond the regulatory deadline to the force majeure; describe the measures taken or to be taken to minimize the delay; and identify a date by which the Permittee proposes to conduct the performance test. The performance test shall be conducted as soon as practicable after the force majeure event occurs.

   [A.A.C. R18-2-312.J.2]

3. The decision as to whether or not to grant an extension to the performance test deadline is solely within the discretion of the Director. The Director shall notify

the Permittee in writing of approval or disapproval of the request for an extension as soon as practicable.

[A.A.C. R18-2-312.J.3]

4. Until an extension of the performance test deadline has been approved by the Director under subsections Conditions XVIII.H.1, 2, and 3 above, the Permittee remains subject to the requirements of Condition XVIII.

[A.A.C. R18-2-312.J.4]

5. For purposes of Condition XVIII, a "force majeure event" means an event that will be or has been caused by circumstances beyond the control of the Permittee, its contractors, or any entity controlled by the Permittee that prevents it from complying with the regulatory requirement to conduct performance tests within the specified timeframe despite the Permittee's best efforts to fulfill the obligation. Examples of such events are acts of nature, acts of war or terrorism, or equipment failure or safety hazard beyond the control of the Permittee.

[A.A.C. R18-2-312.J.5]

XIX. PROPERTY RIGHTS

This permit does not convey any property rights of any sort, or any exclusive privilege.

[A.A.C. R18-2-306.A.8.d]

XX. SEVERABILITY CLAUSE

The provisions of this permit are severable. In the event of a challenge to any portion of this permit, or if any portion of this permit is held invalid, the remaining permit conditions remain valid and in force.

[A.A.C. R18-2-306.A.7]

XXI. PERMIT SHIELD

Compliance with the conditions of this permit shall be deemed compliance with all applicable requirements identified in the portions of this permit subtitled "Permit Shield". The permit shield shall not apply to minor revisions pursuant to Condition XVI.B above and any facility changes without a permit revision pursuant to Condition XVII above.

[A.A.C. R18-2-317.F, - 320, and -325]

XXII. PROTECTION OF STRATOSPHERIC OZONE

If this source becomes subject to the provisions of 40 CFR Part 82, then the Permittee shall comply with these provisions accordingly.

[40 CFR Part 82]

XXIII. APPLICABILITY OF NSPS/NESHAP GENERAL PROVISIONS

For all equipment subject to a New Source Performance Standard or a National Emission Standard for Hazardous Air Pollutants, the Permittee shall comply with all applicable requirements contained in Subpart A of Title 40, Chapter 60 and Chapter 63 of the Code of Federal Regulations.

[40 CFR Part 60 and Part 63]

ATTACHMENT "B": SPECIFIC CONDITIONS

I. GENERAL REQUIREMENTS

A. The Permittee shall have on site or on call a person that is certified in EPA Reference Method 9.

[A.A.C. R18-2-306.A.2]

B. At the time the compliance certifications required by Condition VII of Attachment "A" are submitted, the Permittee shall submit reports of all monitoring activities required by this Attachment performed in the same six month period as applies to the compliance certification period.

[A.A.C. R18-2-306.A.5.a]

C. Deviations of the following Attachment "B" permit conditions requiring the operation and maintenance of air pollution control equipment in a manner consistent with good air pollution control practices for minimizing emissions shall be promptly reported in accordance with Condition XII.B.2 of Attachment "A":

1. Condition I.D.4.a,
2. Condition II.B.1.d(1),
3. Condition II.D.1,
4. Condition IV.C.2.a, b, and c,
5. Condition V.A.2.a,
6. Condition V.B.2.a and b,
7. Condition VI.B.2.a, and
8. Condition VI.C.2.

[A.A.C. R18-2-306.A.5.b]

D. 40 CFR Part 63 Subpart QQQ General Requirements

In addition to specific requirements in this Attachment, the following general requirements shall be applicable to all National Emission Standards for Hazardous Air Pollutants (NESHAP) 40 CFR Part 63 Subpart QQQ affected sources.

1. The Permittee shall comply with the following general provisions of 40 CFR Part 63, Subpart "A":

   40 CFR 63.1, 63.2, 63.3, 63.4, 63.5, 63.6 (a)-(g), 63.6 (i)-(j), 63.7 (a)(3) and (b)-(h), 63.8 excluding 63.8(a)(4), (c)(4), and (f)(6), 63.9, 63.10 excluding 63.10(b)(2)(xiii) and (c)(7)-(8), 63.12, and 63.13-63.15.

   [40 CFR 63.1457]

2. The Permittee shall control particulate matter emissions from fugitive dust sources at the primary copper smelter by operating according to a written fugitive dust control plan that has been approved by the Director. For the purposes of complying with this requirement, the Permittee may use an existing fugitive dust control plan provided that the plan complies with the requirements detailed in Attachment "E".

   [40 CFR 63.1445(a)]

3. The Permittee shall develop and implement a written startup, shutdown, and malfunction plan according to the provisions in 40 CFR 63.6(e)(3).

   [40 CFR 63.1448(c)]

4. Operation and Maintenance Requirements

a. *The Permittee shall always operate* and maintain *all equipment subject to 40 CFR 63 Subpart QQQ, including the associated air pollution control and monitoring equipment, in a manner consistent with good air pollution control practices for minimizing emissions at least to the levels required by 40 CFR 63 Subpart QQQ.*

[40 CFR 63.1447(a) and A.A.C. R18-2-331.A.3.e]
[Material Permit Condition identified by underline]

b. The Permittee shall prepare and operate at all times according to a written operation and maintenance plan for each capture system and control device subject to standards in 40 CFR 63.1444 or 1446. The plan must address the requirements in Conditions I.D.4.b(1) through (3) below as applicable to the capture system or control device.

[40 CFR 63.1447(b)]

(1) Preventive Maintenance

The Permittee must perform preventative maintenance for each capture system and control device according to written procedures specified in the operation and maintenance plan required by Condition I.D.4.b above. The procedures must include a preventative maintenance schedule that is consistent with the manufacturer's instructions for routine and long-term maintenance.

[40 CFR 63.1447(b)(1)]

(2) Capture System Inspections

The Permittee must conduct monthly inspections of the equipment components of the capture system that can affect the performance of the system to collect the gases and fumes emitted from the affected source (e.g., hoods, exposed ductwork, dampers, fans) according to written procedures specified in your operation and maintenance plan. The inspection procedure must include the requirements in Condition I.D.4.b(2)(a) through (c) below as applicable to the capture system or control device.

[40 CFR 63.1447(b)(2)]

(a) Observations of the physical appearance of the equipment to confirm the physical integrity of the equipment (e.g., verify by visual inspection no holes in ductwork or hoods, no flow constrictions caused by dents, or accumulated dust in ductwork). [40 CFR 63.1447(b)(2)(i)]

(b) Inspection, and if necessary testing, of equipment components to confirm that the component is operating as intended (e.g., verify by appropriate measures that flow or pressure sensors, damper plates, automated damper switches and motors are operating according to manufacture or engineering design specifications).

[40 CFR 63.1447(b)(2)(ii)]

(c) In the event that a defective or damaged component is detected during an inspection, the Permittee must initiate corrective action according to written procedures specified in the operation and maintenance plan required by Condition I.D.4.b above to correct the defect or deficiency as soon as practicable.

[40 CFR 63.1447(b)(2)(iii)]

(3) Copper Converter Department Capture System Operating Limits

The Permittee must establish, according to the requirements in Conditions I.D.4.b(3)(a) through (c) below, operating limits for the capture system that are representative and reliable indicators of the performance of capture system when it is used to collect the process off-gas vented from batch copper converters during blowing.

[40 CFR 63.1447(b)(3)]

(a) The Permittee shall select operating limit parameters appropriate for the capture system design that are representative and reliable indicators of the performance of the capture system when it is used to collect the process off-gas vented from batch copper converters during blowing. At a minimum, the Permittee must use appropriate operating limit parameters that indicate the level of the ventilation draft and the damper position settings for the capture system when operating to collect the process off-gas from the batch copper converters during blowing. Appropriate operating limit parameters for ventilation draft include, but are not limited to, volumetric flow rate through each separately ducted hood, total volumetric flow rate at the inlet to control device to which the capture system is vented, fan motor amperage, or static pressure. Any parameter for damper position setting may be used that indicates the duct damper position relative to the fully open setting.

[40 CFR 63.1447(b)(3)(i)]

(b) For each operating limit parameter selected in Condition I.D.4.b(3)(a) above, the Permittee shall designate the value or setting for the parameter at which the capture system operates during batch copper converter blowing. If blister copper production operations allow for more than one batch copper converter to be operating simultaneously in the blowing mode, the Permittee shall designate the value or setting for the parameter at which the capture system operates during each possible batch copper converter blowing configuration that may be operated at the smelter (i.e., the operating limits with one converter blowing, with two converters blowing, with

three converters blowing, as applicable to the smelter).
[40 CFR 63.1447(b)(3)(ii)]

(c) The Permittee shall include documentation in the plan to support the selection of the operating limits established for the capture system. This documentation must include a description of the capture system design, a description of the capture system operation during blister copper production, a description of each selected operating limit parameter, a rationale for why the parameter was chosen, a description of the method used to monitor the parameter according to the requirements in 40 CFR 63.1452(a), and the data used to set the value or setting for the parameter for each of the Permittee's batch copper converter configurations.
[40 CFR 63.1447(b)(3)(iii)]

5. Compliance Requirements

a. The Permittee shall be in compliance with the emission limitations, work practice standards, and operation and maintenance requirements at all times, except during periods of startup, shutdown, and malfunction as defined in 40 CFR 63.2.
[40 CFR 63.1448(a)]

b. The Permittee shall demonstrate continuous compliance by implementing the fugitive dust control measures specified for the sources in the written fugitive dust control plan as prepared in accordance with Attachment "E".
[40 CFR 63.1453(f)]

6. Monitoring Requirements

a. Except for monitoring malfunctions, associated repairs, and required quality assurance or control activities (including as applicable, calibration checks and required zero and span adjustments), the Permittee shall monitor continuously (or collect data at all required intervals) at all times an affected source is operating.
[40 CFR 63.1452(e)]

b. The Permittee shall not use data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities in data averages and calculations used to report emission or operating levels or to fulfill a minimum data available requirement, if applicable. The Permittee shall use all the data collected during all other periods in assessing compliance.
[40 CFR 63.1452(f)]

c. A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitor to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions.
[40 CFR 63.1452(g)]

7. Notification Requirements

a. The Permittee shall submit all of the notifications in 40 CFR 63.7(b) and (c), 63.8(f)(4), and 63.9(b) through (h) by the specified dates.
[40 CFR 63.1454(a)]

b. The Permittee shall submit a notification of intent to conduct a performance test at least 60 calendar days before the performance test is scheduled to begin as required in 40 CFR 63.7(b)(1).
[40 CFR 63.1454(d)]

8. Reporting Requirements
[40 CFR 63.1455]

a. The Permittee shall submit each of the following reports as applicable:
[40 CFR 63.1455(a)]

(1) The Permittee shall submit a compliance report semiannually according to the requirements in Condition I.D.8.b below and containing the information in Condition I.D.8.c below.
[40 CFR 63.1455(a)(1)]

(2) The Permittee shall submit an immediate startup, shutdown, and malfunction report if there was a startup, shutdown, or malfunction during the reporting period that is not consistent with the startup, shutdown, and malfunction plan. The Permittee shall report the actions taken for the event by fax or telephone within 2 working days after starting actions inconsistent with the plan. The Permittee shall submit the information in 40 CFR § 63.10(d)(5)(ii) by letter within 7 working days after the end of the event unless alternate arrangements have been made with the Director.

Timely reporting and submittal of information regarding deviation from startup, shutdown, and malfunction plan, as specified above, shall be considered as compliance with permit conditions, and such deviation will not be reportable as a "Permit Deviation Reporting" as specified in Condition XII.B of Attachment "A."
[40 CFR 63.1455(a)(2)]

b. The Permittee shall submit each compliance report required in Condition I.D.8.a above in accordance with Condition VII of Attachment "A."
[40 CFR 63.1455(b)]

c. Each compliance report shall contain the following information in Conditions I.D.8.c(1) through (3) below and, as applicable, Conditions I.D.8.c(4) through (8) below.
[40 CFR 63.1455(c)]

(1) Company name and address.
[40 CFR 63.1455(c)(1)]

(2) Statement by a responsible official, as defined in 40 CFR 63.2, with that official's name, title, and signature, certifying the

accuracy and completeness of the content of the report.

[40 CFR 63.1455(c)(2)]

(3) Date of report and beginning and ending dates of the reporting period.

[40 CFR 63.1455(c)(3)]

(4) If there was a startup, shutdown or malfunction during the reporting period and actions were taken consistent with the startup, shutdown, and malfunction plan, the compliance report shall include the information in 40 CFR 63.10(d)(5)(i).

[40 CFR 63.1455(c)(4)]

(5) If there are no deviations from any emission limitations (emission limit, operating limit, opacity limit) that apply to this source and there are no deviations from the requirements for work practice standards in 40 CFR 63, Subpart QQQ, a statement that there were no deviations from the emission limitations, work practice standards, or operation and maintenance requirements during the reporting period.

[40 CFR 63.1455(c)(5)]

(6) If there were no periods during which an operating parameter monitoring system was out-of-control as specified in 40 CFR 63.8(c)(7), a statement that there were no periods during which the monitoring system was out-of-control during the reporting period.

[40 CFR 63.1455(c)(6)]

(7) For each deviation from an emission limitation (emission limit, operating limit, opacity limit) and for each deviation from the requirements for work practice standards that occurs at an affected source where the Permittee is not using a continuous monitoring system to comply with the emission limitations or work practice standards in Subpart QQQ, the compliance report shall contain the information in Conditions I.D.8.c(1)through (4) above and the information in Conditions I.D.8.c(7)(a) and (7)(b) below. This includes periods of startup, shutdown, and malfunction.

[40 CFR 63.1455(c)(7)]

(a) The total operating time of each affected source during the reporting period.

[40 CFR 63.1455(c)(7)(i)]

(b) Information on the number, duration, and cause of deviations (including unknown cause, if applicable), as applicable, and the corrective action taken.

[40 CFR 63.1455(c)(7)(ii)]

(8) For each deviation from an emission limitation (emission limit, operating limit, opacity limit, and visible emission limit) occurring at an affected source where the Permittee is using an

operating parameter monitoring system to comply with the emission limitation in Subpart QQQ, the Permittee shall include the information in Conditions I.D.8.c(1) through (4) above and the information in Conditions I.D.8.c(8)(a)through (k) below. This includes periods of startup, shutdown, and malfunction.

[40 CFR 63.1455(c)(8)]

(a) The date and time that each malfunction started and stopped.

[40 CFR 63.1455(c)(8)(i)]

(b) The date and time that each monitoring system was inoperative, except for zero (low-level) and high-level checks.

[40 CFR 63.1455(c)(8)(ii)]

(c) The date, time and duration that each monitoring system was out-of-control, including the information in 40 CFR 63.8(c)(8).

[40 CFR 63.1455(c)(8)(iii)]

(d) The date and time that each deviation started and stopped, and whether each deviation occurred during a period of startup, shutdown, or malfunction or during another period.

[40 CFR 63.1455(c)(8)(iv)]

(e) A summary of the total duration of the deviation during the reporting period and the total duration as a percent of the total source operating time during that reporting period.

[40 CFR 63.1455(c)(8)(v)]

(f) A breakdown of the total duration of the deviations during the reporting period into those that are due to startup, shutdown, control equipment problems, process problems, other known causes, and other unknown causes.

[40 CFR 63.1455(c)(8)(vi)]

(g) A summary of the total duration of monitoring system downtime during the reporting period and the total duration of monitoring system downtime as a percent of the total source operating time during that reporting period.

[40 CFR 63.1455(c)(8)(vii)]

(h) A brief description of the process units.

[40 CFR 63.1455(c)(8)(viii)]

(i) A brief description of the monitoring system.

[40 CFR 63.1455(c)(8)(ix)]

(j) The date of the latest monitoring system certification or audit.

[40 CFR 63.1455(c)(8)(x)]

(k) A description of any changes in continuous monitoring systems, processes, or controls since the last reporting period.

[40 CFR 63.1455(c)(8)(xi)]

d. The Permittee shall report all deviations from the applicable requirements of 40 CFR 63, Subpart QQQ in the semiannual monitoring report required pursuant to Condition I.D.8.a above. If the semiannual compliance report includes all required information concerning deviations from any emission limitation (including any operating limit), or work practice requirement in Subpart QQQ, submission of the compliance report is deemed to satisfy the obligation to report the same deviations in the semiannual monitoring report specified in Condition I.B above. For the purpose of permit deviation reporting in Condition XII.B of Attachment "A," prompt reporting of deviations from applicable Subpart QQQ requirements shall mean that the Permittee report these deviations in the semiannual compliance report pursuant to Condition I.D.8.a above.

[40 CFR 63.1455(d)]

9. Recordkeeping Requirements

a. The Permittee shall keep the following records:

[40 CFR 63.1456(a)]

(1) A copy of each notification and report submitted to comply with 40 CFR 63, Subpart QQQ, including all documentation supporting any initial notification or notification of compliance status submitted according to the requirements in 40 CFR 63.10(b)(2)(xiv).

[40 CFR 63.1456(a)(1)]

(2) The records in 40 CFR 63.6(e)(3)(iii) through (v) related to startup, shutdown, and malfunction.

[40 CFR 63.1456(a)(2)]

(3) Records or performance tests and performance evaluations as required in 40 CFR 63.10(b)(2)(viii).

[40 CFR 63.1456(a)(3)]

(4) For each monitoring system, the Permittee shall keep records specified below:

[40 CFR 63.1456(a)(4)]

(a) Records described in 40 CFR 63.10(b)(2)(vi) through (xi).

[40 CFR 63.1456(a)(4)(i)]

(b) Monitoring data recorded by the monitoring system during a performance evaluation as required in

§63.6(h)(7)(i) and (ii).

[40 CFR 63.1456(a)(4)(ii)]

(c) Previous (i.e., superseded) versions of the performance evaluation plan as required in 40 CFR 63.8(d)(3).

[40 CFR 63.1456(a)(4)(iii)]

(d) Records of the date and time that each deviation started and stopped, and whether the deviation occurred during a period of startup, shutdown, or malfunction or during another period. [40 CFR 63.1456(a)(4)(iv)]

(5) For each performance test conducted to demonstrate compliance with an opacity limit according to Condition VI.A.5 of this Attachment, the Permittee shall keep the records specified in Conditions I.D.9.a(5)(a) through (i) below:

[40 CFR 63.1456(a)(5)]

(a) Dates and time intervals of all opacity observation period segments;

[40 CFR 63.1456(a)(5)(i)]

(b) Description of overall smelter operating conditions during each observation period. Identify, if any, the smelter copper production process equipment that was out-of-service during the performance test and explain why this equipment was not in operation;

[40 CFR 63.1456(a)(5)(ii)]

(c) Name, affiliation, and copy of current visible emission reading certification for each visible emission observer participating in performance test;

[40 CFR 63.1456(a)(5)(iii)]

(d) Name, title, and affiliation for each indoor process monitor participating in the performance test;

[40 CFR 63.1456(a)(5)(iv)]

(e) Copies of all visible emission observer opacity field data sheets;

[40 CFR 63.1456(a)(5)(v)]

(f) Copies of all indoor process monitor operating log sheets;

[40 CFR 63.1456(a)(5)(vi)]

(g) Copies of all data summary sheets used for data reduction;

[40 CFR 63.1456(a)(5)(vii)]

(h) Copy of calculation sheets of the average opacity value used to demonstrate compliance with the opacity limit; and

[40 CFR 63.1456(a)(5)(viii)]

(i) Documentation according to the requirements in 40 CFR

63.1450(c)(9)(iv) to support the selection of the site-specific capture system operating limits used for each batch copper converter capture system when blowing.
[40 CFR 63.1456(a)(5)(ix)]

b. Records shall be in a form suitable and readily available for expeditious review, according to 40 CFR 63.10(b)(1).
[40 CFR 63.1456(b)]

c. As specified in 40 CFR 63.10(b)(1), the Permittee shall keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record.
[40 CFR 63.1456(c)]

d. The Permittee shall keep each record on site for at least 2 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record, according to 40 CFR 63.10(b)(1). The Permittee may keep the records off site for the remaining 3 years.
[40 CFR 63.1456(d)]

10. Permit Shield

Compliance with requirements of Condition I.D above shall be deemed compliance with 40 CFR 63.1445 (a), 1447(a), (b), 1448(a), (c), 1452(e), (f), (g), 1453(f), 1454(a), (d), 1455(a), (b), (c), (d), 1456(a), (b), (c), and (d), and 1457.
[A.A.C. R18-2-325]

E. Periodic Opacity Monitoring Requirements
[A.A.C. R18-2-306.A.3.c]

1. A certified EPA Reference Method 9 observer shall conduct, in accordance with an approved observation plan, bi-weekly surveys of visible emissions from the stacks and fugitive dust sources, as identified in the permit.

2. If the observer, during the visual survey, does not observe any visible emissions that on an instantaneous basis appears to exceed the applicable opacity standard, then the observer shall keep a record of the name of the observer, the date on which the observation was made, and the results of the observation.

3. If the observer sees visible emissions that on an instantaneous basis appear to exceed the opacity standard, then the observer shall, if practicable, take a six-minute Method 9 observation of the visible emissions.

4. For any six-minute Method 9 observation conducted, the observer shall keep a record of the name of the observer; the location, date, and time of the observation; and the results of the observation.

F. Emissions Control Project
[A.A.C. R18-2-306.A.2]

1. Emissions Control Project, (hereinafter referred to as "Project") includes the following changes for pollution control at the facility:

a. Reconfiguration of the converter roofline to maximize capture of process fugitive emissions and routing of the captured fugitive emissions to a new aisle scrubber using caustic for SO_2 removal.

b. Capture of fugitive emissions from the anode furnaces and routing of those captured emissions to the anode baghouse. Emissions will then be routed to the new aisle scrubber;

c. Upgrade of vent fume scrubber and the acid plant tail gas scrubber to use caustic for SO_2 removal; and,

d. Replacement of vent fume stack and acid plant tail gas stack with stacks of increased height.

2. Commencement of operation of the facility after completion of all the above Project improvements shall be deemed "Project startup."

3. The Permittee shall provide notification of the date of startup within 15 days of Project startup.

4. Not later than 180 days from Project startup, the Permittee shall demonstrate compliance with the emission limits identified in Condition II.B.1.a(1) of this Attachment.

II. FACILITY-WIDE REQUIREMENTS

A. Feed Limitations

1. Throughput Restrictions

a. Until Project startup, the maximum feed rate of new metal bearing material shall be limited to 850,000 dry tons per year of concentrate to the furnaces (IsaSmelt® and Electric), calculated as a twelve month rolling sum.

[Condition VIII.A of Attachment B of Installation Permit #1232]

b. *Upon Project startup, the Permittee shall limit the maximum feed rate of new metal bearing material to 1,000,000 dry tons per year of concentrate to the furnaces (IsaSmelt® and Electric), calculated as a twelve-month rolling sum.*

[A.A.C. R18-2-306.A.2 and -331.A.3.a]
[Material permit conditions are identified by italics and underline]

2. Monitoring, Recordkeeping, and Reporting Requirements

The Permittee shall log and maintain daily records of the amounts of concentrate feed to the furnace. At the end of every month, the Permittee shall update the monthly and rolling twelve month totals of concentrate feed. These records shall be made available to ADEQ upon request.

[A.A.C. R18-2-306.A.3.c]

3. Permit Shield

Compliance with requirements of Condition II.A.1 above shall be deemed compliance with Condition VIII.A of Attachment B of Installation Permit #1232.
[A.A.C. R18-2-325]

B. Combined Emission Limitations for Smelter Processes

1. Sulfur Dioxide (SO_2)

a. Emission Limitation

(1) Upon Project startup and until the effective date of A.A.C. R18-2-C1302, the Permittee shall comply with the following emission limitations.
[SIP Rule R18-2-306.A.2]

(a) Combined SO_2 emissions from the tail gas stack, vent fume stack, aisle scrubber stack, and smelter roofline fugitives shall not exceed 477 tons per year on a 365-day rolling total basis.

(b) Combined SO_2 emissions from the tail gas stack, vent fume stack, and aisle scrubber stack shall not exceed 128 tons per year on a 365-day rolling total basis.

(2) Upon the effective date of A.A.C. R18-2-C1302, combined SO_2 emissions from the tail gas stack, vent fume stack, aisle scrubber stack, bypass stack, and smelter roofline fugitives shall not exceed 142.45 pounds per hour on a 30-day rolling average basis.
[A.A.C. R18-2-C1302.C]

b. Compliance Demonstration Requirements

(1) No later than 180 days from Project startup, the Permittee shall demonstrate compliance with SO_2 emission limits in Condition II.B.1.a(1) above in accordance with following:
[A.A.C. R18-2-306.A.3.c]

(a) The Permittee shall calculate and record daily total SO_2 emissions for each stack (tail gas stack, vent fume stack, and aisle scrubber stack,) based on CMS data specified in Conditions IV.C.3.e, V.B.3.b(5), and VI.C.3.b of this Attachment for the respective stacks.

(b) The Permittee shall calculate and record daily total SO_2 emissions from the roofline based on data collected from the roofline SO_2 emission monitors specified in Condition VIII.B.2.b(2) of this Attachment.

(c) To demonstrate compliance with emission limitations in Conditions II.B.1.a(1)(a) and (b) above, the Permittee shall perform the following:

(i) For the first 365 days, at the end of each day, the Permittee shall calculate and record the daily and daily running total of SO_2 emissions from:

(ii) The tail gas stack, vent fume stack, aisle scrubber stack and smelter roofline fugitives to demonstrate compliance with the emission limitation in Condition II.B.1.a(1)(a) above.

(iii) The tail gas stack, vent fume stack, and aisle scrubber stack to demonstrate compliance with the emission limitation in Condition II.B.1.a(1)(b) above.

(d) After the first 365 days, at the end of each day, the Permittee shall calculate and record daily and 365-day rolling total of SO_2 emissions from:

(i) The tail gas stack, vent fume stack, aisle scrubber stack and smelter roofline fugitives to demonstrate compliance with emission limitation in Condition II.B.1.a(1)(a) above.

(ii) The tail gas stack, vent fume stack, and aisle scrubber stack to demonstrate compliance with the emission limitation in Condition II.B.1.a(1)(b) above.

(2) Within 180 days of the effective date of A.A.C. R18-2-C1302.A.2, the Permittee shall demonstrate compliance with SO_2 emission limits in Condition II.B.1.a(2) above by calculating SO_2 emission for each operating day in accordance with following:

[A.A.C. R18-2-C1302.F.1]

(a) Sum the hourly pounds of SO_2 measured by the continuous monitoring systems required by Conditions II.B.1.c(1) and II.B.1.c(2) below for the current operating day and the preceding 29 operating days to calculate the total pounds of SO_2 emissions over the 30-operating day averaging period.

[A.A.C. R18-2-C1302.F.1.a]

(b) Multiply the operating days occurring during a 30- day averaging period by 24 to calculate the total operating hours over the most recent 30-operating day period.

[A.A.C. R18-2-C1302.F.1.b]

(c) Divide the total amount of SO_2 emissions calculated from Condition II.B.1.b(2)(a) above by the total operating hours calculated from Condition II.B.1.b(2)(b) above to calculate the 30-day rolling hourly average SO_2 emissions.

[A.A.C. R18-2-C1302.F.1.c]

(3) The Permittee shall, for the continuous monitoring systems required by Conditions II.B.1.c(1) and II.B.1.c(2) below, compute hourly emissions as follows:

[A.A.C. R18-2-C1302.F.2]

(a) Except as provided under Condition II.B.1.b(3)(c) below, for a full operating hour (any clock hour with 60 minutes of unit operation), at least four valid data points are required to calculate the hourly average, i.e., one data point in each of the 15-minute quadrants of the hour.

[A.A.C. R18-2-C1302.F.2.a]

(b) Except as provided under Condition II.B.1.b(3)(c) below, for a partial operating hour (any clock hour with less than 60 minutes of unit operation), at least one valid data point in each 15-minute quadrant of the hour in which the unit operates is required to calculate the hourly average.

[A.A.C. R18-2-C1302.F.2.b]

(c) For any operating hour in which required maintenance or quality-assurance activities are performed:

[A.A.C. R18-2-C1302.F.2.c]

(i) If the unit operates in two or more quadrants of the hour, a minimum of two valid data points, separated by at least 15 minutes, is required to calculate the hourly average; or

[A.A.C. R18-2-C1302.F.2.c.i]

(ii) If the unit operates in only one quadrant of the hour, at least one valid data point is required to calculate the hourly average.

[A.A.C. R18-2-C1302.F.2.c.ii]

(d) If a daily calibration error check is failed during any operating hour, all data for that hour shall be invalidated, unless a subsequent calibration error test is passed in the same hour and the requirements of Condition II.B.1.b(3)(c) above are met, based solely on valid data recorded after the successful calibration.

[A.A.C. R18-2-C1302.F.2.d]

(e) For each full or partial operating hour, all valid data points shall be used to calculate the hourly average.

[A.A.C. R18-2-C1302.F.2.e]

(f) Data recorded during periods of continuous monitoring system breakdown, repair, maintenance, out of control periods, calibration checks, and zero and span adjustments shall not be included in the data averages computed under Condition II.B.1.b(4) below.

[A.A.C. R18-2-C1302.F.2.f]

(g) Either arithmetic or integrated averaging of all data may be used to calculate the hourly average. The data may be recorded in reduced or un-reduced form.
[40 CFR 60.13(h) and A.A.C. R18-2-C1302.F.2.g]

(4) When no valid hour or hours of data have been recorded by a continuous monitoring system required by Conditions II.B.1.c(1) and II.B.1.c(2) below and the associated process unit is operating, the Permittee shall calculate substitute data for each such period according to the following procedures:
[A.A.C. R18-2-C1302.F.3]

(a) For a missing data period less than or equal to 24 hours, substitute the average of the hourly SO_2 concentrations recorded by the system for the hour before and the hour after the missing data period.
[A.A.C. R18-2-C1302.F.3.a]

(b) For a missing data period greater than 24 hours, substitute the greater of:
[A.A.C. R18-2-C1302.F.3.b]

(i) The 90^{th} percentile hourly SO_2 concentrations recorded by the system during the previous 720 quality-assured monitor operating hours; or
[A.A.C. R18-2-C1302.F.3.b.i]

(ii) The average of the hourly SO_2 concentrations recorded by the system for the hour before and the hour after the missing data period.
[A.A.C. R18-2-C1302.F.3.b.ii]

(5) The Permittee shall include periods of startup, shutdown, malfunction, or other upset conditions when determining compliance with the emission limit in Condition II.B.1.a(2) above.
[A.A.C. R18-2-C1302.F.4]

c. Monitoring Requirements

Upon the effective date of A.A.C R18-2-C1302, the Permittee shall perform the following:

(1) To determine compliance with Condition II.B.1.a(2) above, the Permittee shall install, calibrate, maintain, and operate continuous monitoring systems to monitor and record SO_2 concentrations and stack gas volumetric flow rates at the stacks associated with the following:
[A.A.C. R18-2-C1302.E.1]

(a) The acid plant tail gas,

(b) The vent fume,

(c) The aisle scrubber, and

(d) The bypass.

(2) To determine compliance with the emission limit in Condition II.B.1.a(2) above, the Permittee shall install, calibrate, maintain, and operate a continuous monitoring system to monitor and record fugitive SO_2 concentrations at the Miami Smelter roofline.

[A.A.C. R18-2-C1302.E.2]

(3) Except during periods of continuous monitoring system breakdown, repairs, maintenance, out-of-control periods, calibration checks, and zero and span adjustments, the Permittee shall continuously monitor SO_2 concentrations and stack gas volumetric flow rates at each location specified in Condition II.B.1.c(1) above and use the monitored concentrations and volumetric flow rates when demonstrating compliance with the SO_2 emission limit in Condition above in accordance with Condition II.B.1.b(2) above.

[A.A.C. R18-2-C1302.E.3]

(4) Except during periods of continuous monitoring system breakdown, repairs, maintenance, out-of-control periods, calibration checks and zero and span adjustments, the Permittee shall continuously monitor fugitive SO_2 emissions at the Miami Smelter roofline and use the monitored concentrations and volumetric flow rates when demonstrating compliance with the SO_2 emission limit in Condition II.B.1.a(2) above in accordance with Condition II.B.1.b(2) above.

[A.A.C. R18-2-C1302.E.4]

(5) For purposes of Conditions II.B.1.c(3) and II.B.1.c(4) above, continuous monitoring means the taking and recording of at least one measurement of SO_2 concentration and stack gas flow rate reading from the effluent of each affected stack, outlet, or other approved measurement location in each 15-minute period when the associated process units are operating. Fifteen-minute periods start at the beginning of each clock hour, and run consecutively. All continuous monitoring systems required by Condition II.B.1.c(1) above shall complete at least one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute period.

[40 CFR 60.13(e)(2) and A.A.C. R18-2-C1302.E.5]

(6) If the Permittee can demonstrate to the Director and EPA Region IX that measurement of stack gas volumetric flow rate in the outlet of any particular piece of SO_2 control equipment would yield inaccurate results or would be technologically infeasible, then the Director and EPA Region IX may allow measurement of the flow rate at an alternative sampling point.

[A.A.C. R18-2-C1302.E.6]

d. Operational Standards

(1) Process Equipment and control device operations.

Upon the effective date of A.A.C R18-2-C1302, the Permittee shall, at all times, including periods of startup, shutdown, and malfunction, the Permittee shall, to the extent practicable, maintain and operate smelter processes and associated emission control devices in a manner consistent with good air pollution control practices for minimizing SO_2 emissions from the process gases associated with the IsaSmelt® furnace, electric furnace, and converters at least to the levels required by Condition II.B.1.a(2) above. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Director and EPA Region IX, which may include, but is not limited to, monitoring results, review of operating and maintenance procedures and records, and inspection of the relevant equipment.

[A.A.C. R18-2-C1302.D.1]

(2) Capture system and control device operations and maintenance plan.

Upon the effective date of A.A.C R18-2-C1302, the Permittee shall develop and implement an operations and maintenance plan for each capture system and control device used to ventilate or control process gas or emissions associated with the IsaSmelt ® furnace, electric furnace, and converters. The Permittee shall submit the initial plan to the Department and EPA Region IX for review and approval by July 1, 2017.

[A.A.C. R18-2-C1302.D.2]

(3) The operations and maintenance plan required by Condition II.B.1.d(2) above shall address the following requirements as applicable to each capture system and control device:

[A.A.C. R18-2-C1302.D.2.a]

(a) Monitoring devices:

The plan shall provide for installation, operation, calibration, and maintenance of appropriate monitoring devices to measure and record operating limit or range values at all times the required system is operating. Dampers that are manually set and remain in the same position while the capture system is operating are exempt from these monitoring requirements.

[A.A.C. R18-2-C1302.D.2.a.i]

(b) Operational limits and ranges:

The Permittee shall establish operating limits and ranges in the plan for each capture system and control device that are representative and reliable indicators of capture system performance and control device operation. If selected as an operational limit or range, capture system damper position settings shall be specified in the plan.

[A.A.C. R18-2-C1302.D.2.a.ii]

(c) Preventative maintenance:

The Permittee shall perform preventative maintenance for each capture system and control device according to written procedures in the plan. The procedures must include a preventative maintenance schedule that is consistent with the manufacturer's or engineer's instructions and specified frequency for routine and long-term maintenance.

[A.A.C. R18-2-C1302.D.2.a.iii]

(d) Inspections:

The Permittee shall perform inspections in accordance with written procedures in the plan for each capture system and control device, including position verification of any manual damper settings specified in the plan, that are consistent with the manufacturer's or engineer's instructions for each system and device.

[A.A.C. R18-2-C1302.D.2.a.iv]

(4) The Permittee shall operate and maintain each capture system and each control device in accordance with the plan required by Condition II.B.1.d(2) above and as approved by the Department and EPA Region IX, except as provided herein. Until receiving initial approval of the plan, the Permittee shall operate and maintain each capture system and each control device in accordance with the plan as initially submitted pursuant to Condition II.B.1.d(2) above. The Permittee shall submit plan revisions for review by the Department and EPA Region IX. At any time, the Department and/or EPA Region IX may require the Permittee to revise the plan if determined to be inconsistent with Condition II.B.1.d(3) above. Within 60 days of receiving written notification from the Department or EPA Region IX specifying such inconsistency, the Permittee shall submit a proposal to the Department and EPA Region IX that addresses the inconsistency. The Permittee shall maintain a current copy of the plan onsite and available for review and inspection upon request.

[A.A.C. R18-2-C1302.D.2.b]

e. Recordkeeping Requirements

Upon the effective date of A.A.C. R18-2-C1302, the Permittee shall maintain the following records for at least five years:

(1) Records as specified in the capture system and control device operations and maintenance plan required under Condition II.B.1.d(2) above and the roofline fugitive emissions monitoring plan required under Condition X.I.1 of this Attachment.

(2) All measurements from the continuous monitoring systems required by Conditions II.B.1.c(1) and II.B.1.c(2) above; including the date, place, and time of sampling or measurement, parameters sampled or measured, and results.

(3) All records of all compliance calculations required by Condition II.B.1.b(2) above.

(4) All records of quality assurance and quality control activities conducted on the continuous monitoring systems required by Conditions II.B.1.c(1) and II.B.1.c(2) above.

(5) All records of continuous monitoring system breakdowns, repairs, maintenance, out of control periods, calibration checks, and zero and span adjustments for the continuous monitoring systems required by Conditions II.B.1.c(1) and II.B.1.c(2) above.

(6) All records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of Smelter processes; any malfunction of the associated air pollution control equipment; or any periods during which a continuous monitoring system or monitoring device required by Conditions II.B.1.c(1) and II.B.1.c(2) above is inoperative.

(7) All records of all major maintenance activities conducted on emission units, capture system, air pollution control equipment, and continuous monitoring systems; including those set forth in the operations and maintenance plan required by Condition II.B.1.d(2) above.

(8) All records of reports and notifications required by Condition II.B.1.f above.

[40 CFR 60.7(b) and (f), and A.A.C. R18-2-C1302.G]

f. Reporting Requirements

Upon the effective date of A.A.C. R18-2-C1302, the Permittee shall comply with the following:

(1) Within 30 days after the end of each calendar quarter, the Permittee shall submit a data assessment report to the Director in accordance with 40 CFR Part 60, Appendix F, Procedure 1 for the continuous monitoring systems required by Conditions II.B.1.c(1) and II.B.1.c(2) above.

(2) The Permittee shall submit an excess emissions and monitoring systems performance report (EEMSP) and-or summary report

form in accordance with 40 CFR § 60.7(c) to the Director semiannually for the continuous monitoring systems required by Conditions II.B.1.c(1) and II.B.1.c(2) above. All reports shall be postmarked by the 30th day following the end of each six-month period.

(3) The summary report form submission required in Condition II.B.1.f(2) above shall be in the format specified in 40 CFR 60.7(d). Each EEMSP report shall include the following information:

(a) The magnitude of excess emissions computed, any conversion factor(s) used, and the date and time of commencement and completion of each time period of excess emissions. The process operating time during the reporting period.

(b) Specific identification of each period of excess emissions that occurs during startups, shutdowns, and malfunctions of the affected facility. The nature and cause of any malfunction (if known), the corrective action taken or preventative measures adopted.

(c) The date and time identifying each period during which the continuous monitoring system was inoperative except for zero and span checks and the nature of the system repairs or adjustments.

(d) When no excess emissions have occurred or the continuous monitoring system(s) have not been inoperative, repaired, or adjusted, such information shall be stated in the report.

(4) The Permittee shall provide the following to the Director:

(a) Notification of commencement of construction of the project improvements and equipment authorized by Significant Permit Revision No. 53592 to comply with the operational or emission limits in this Condition no later than 30 days after such date.

(b) Semiannual progress reports on construction of any such improvements and equipment on January 1st and July 1st of each calendar year until construction is complete.

(c) Notification of initial startup of any such improvements and equipment within 15 days after such date.

[40 CFR 60.7(c) and (d), and A.A.C. R18-2-C1302.H]

g. Permit Shield

Compliance with requirements of Conditions II.B.1 above shall be deemed compliance with A.A.C. R18-2-C1302.C, D, E.1 to E.6, F, G, and H.
[A.A.C. R18-2-325]

2. Nitrogen Oxides (NO_x)

a. Emission Limitation

[40 CFR 52.145(m)(4)(iii)]

Total NO_X emissions from the electric furnace and the batch copper converters shall not exceed 40 tons per 12-continuous month period

b. Compliance Demonstration Requirements

Compliance with the emission limit for NO_X in Condition II.B.2.a above shall be demonstrated by monitoring natural gas consumption in each of the batch copper converters and the electric furnace for each calendar day. At the end of each calendar month, the Permittee shall calculate monthly and 12-consecutive month NO_X emissions by multiplying the daily natural gas consumption rates for each unit by an approved emission factor and adding the sums for all units over the previous 12-consecutive month period.

[40 CFR 52.145(m)(6)(iv)]

c. Recordkeeping

The Permittee shall maintain records of daily natural gas consumption in the electric furnace and each batch copper converter and all calculations performed to demonstrate compliance with the limit in Condition II.B.2.a above.

[40 CFR 52.145(m)(9)(ix)]

d. Permit Shield

Compliance with requirements of Conditions II.B.2 above shall be deemed compliance with 40 CFR 52.145(m)(1), (m)(4)(ii), (m)(5)(ii), (m)(6)(iv), and (m)(9)(ix).

[A.A.C. R18-2-325]

3. Particulate Matter

a. Emission Limitation

Upon Project startup, the Permittee shall not exceed the following combined particulate matter emissions limit from the tail gas stack, vent fume stack, aisle scrubber stack and smelter roofline fugitives:

[SIP Rule R18-2-306.02.A]

(1) Particulate matter (PM): 364 tons per year on 12-month rolling total basis

(2) Particulate matter less than 10 microns (PM_{10}): 287 tons per year

on 12-month rolling total basis

(3) Particulate matter less than 2.5 microns ($PM_{2.5}$): 221 tons per year on 12-month rolling total basis

b. Compliance Demonstration

No later than 180 days from Project startup, the Permittee shall demonstrate compliance with particulate matter emission limits in Condition II.B.3.a above in accordance with following:

[A.A.C. R18-2-306.A.3.c]

(1) The Permittee shall calculate and record combined monthly emissions for the tail gas stack, vent fume stack, aisle scrubber stack and smelter roofline fugitives for PM, PM_{10} and $PM_{2.5}$ based on the monthly emissions calculated and recorded pursuant to Conditions IV.A.2.b(2)(a), V.A.3.b(2)(a), VI.B.3.d(1) and VIII.A.6.b(1) of this Attachment.

(2) To demonstrate compliance with emission limitations in Conditions II.B.3.a(1), II.B.3.a(2), and II.B.3.a(3) above:

(a) During the first 12-month period, at the end of each month, the Permittee shall calculate and record running monthly total of combined particulate matter emissions from the tail gas stack, vent fume stack, aisle scrubber stack and smelter roofline fugitives based on monthly emissions calculated and recorded pursuant to Condition II.B.3.b(1) above.

(b) After the initial 12-month period, at the end of each month, the Permittee shall calculate and record rolling 12-month total of combined emissions from the tail gas stack, vent fume stack, aisle scrubber stack and smelter roofline fugitives based on the monthly emissions calculated and recorded pursuant to Condition II.B.3.b(1) above.

4. Lead

a. Emission Limitation

Upon Project startup, the Permittee shall not exceed 5.17 tons per year of combined lead emissions from the tail gas stack, vent fume stack, aisle scrubber stack and smelter roofline fugitives.

[SIP Rule R18-2-306.02.A]

b. Compliance Demonstration

No later than 180 days from Project startup, the Permittee shall demonstrate compliance with lead emission limits in Condition II.B.4.a above in accordance with following:

[A.A.C. R18-2-306.A.3.c]

(1) The Permittee shall calculate and record monthly total lead emissions from the tail gas stack, vent fume stack, aisle scrubber stack and smelter roofline fugitives based on the monthly emissions calculated and recorded pursuant to Conditions IV.A.2.b(1), V.C.2.b(1), VI.D.2.a, and VIII.C.2.c(1) of this Attachment.

(2) To demonstrate compliance with emission limitations in Condition II.B.4.a above, the Permittee shall perform the following:

(a) During the first 12-month period, at the end of each month, the Permittee shall calculate and record running monthly total lead emissions from the tail gas stack, vent fume stack, aisle scrubber stack and smelter roofline fugitives based on the total monthly emissions calculated and recorded pursuant to Condition II.B.4.b(1) above.

(b) After the first 12-month period, at the end of each month, the Permittee shall calculate and record monthly total and rolling 12-month total lead emissions from the tail gas stack, vent fume stack, aisle scrubber stack and smelter roofline fugitives based on the total monthly emissions calculated and recorded pursuant to Condition II.B.4.b(1) above.

C. Copper Converter Capture System

1. Emission Capture System

a. No later than January 1, 2018, the Permittee shall operate a capture system that has been designed to maximize collection of process off gases vented from each converter. The capture system shall include a primary capture system as described in 40 CFR 63.1444(d)(3) and a secondary capture system designed to maximize the collection of emissions not collected by the primary capture system.

[40 CFR 52.145(m)(3)(i)]

b. No later than January 1, 2018, the Permittee shall optimize the operation of the batch copper converters, primary capture system, and secondary capture system to capture the maximum amount of process off gases vented from each converter at all times.

[40 CFR 52.145(m)(3)(ii)]

2. Operation and Maintenance Plan

a. The Permittee shall prepare a written operation and maintenance plan according to the requirements in Condition II.C.2.b below and submit this

plan to the Regional Administrator no later than 180 days prior to January 1, 2018. At all times when one or more converters are blowing, the Permittee shall operate the capture system consistent with this plan.

[40 CFR 52.145(m)(3)(iii) and 40 CFR 63.1447(b)]

b. The written operations and maintenance plan required by Condition II.C.2.a above shall address the following requirements as applicable to the capture system or control device:

[40 CFR 52.145(m)(3)(iv) and 40 CFR 63.1447(b)]

(1) Preventative maintenance

The Permittee shall perform preventative maintenance for each capture system and control device according to written procedures specified in the Permittee's operation and maintenance plan. The procedures must include a preventative maintenance schedule that is consistent with the manufacturer's or engineer's instructions for routine and long-term maintenance.

[40 CFR 52.145(m)(3)(iv)(A)]

(2) Capture system inspections

The Permittee shall perform capture system inspections for each capture system in accordance with the requirements of Conditions I.D.4.b(2)(a) through (c) of this Attachment.

[40 CFR 52.145(m)(3)(iv)(B)]

(3) Copper converter department capture system operating limits

The Permittee shall establish, according to the requirements of Conditions I.D.4.b(3) through (c) of this Attachment., operating limits for the capture system that are representative and reliable indicators of the performance of capture system when it is used to collect the process off-gas vented from batch copper converters during blowing.

[40 CFR 52.145(m)(3)(iv)(C)]

3. Capture System Monitoring

For each operating limit established under the capture system operation and maintenance plan required by Condition II.C.1 above, the Permittee shall install, operate, and maintain an appropriate monitoring device according to the requirements in 40 CFR 63.1452(a)(1) though (6) to measure and record the operating limit value or setting at all times the required capture system is operating. Dampers that are manually set and remain in the same position at all times the capture system is operating are exempted from these monitoring requirements.

[40 CFR 52.145(m)(8)]

4. Emission Limitations and Work Practice Standards

No later than January 1, 2018, the Permittee shall control SO_2 emissions collected by the capture system required by Condition II.C.1 above by one or more control devices and reduce SO_2 emissions by at least 99.7 percent, based on a 365-day

rolling average.

[40 CFR 52.145(m)(4)(i)]

5. Continuous Monitoring System (CMS)

[40 CFR 52.145(m)(6)(i)]

a. No later than January 1, 2018, the Permittee shall at all times maintain, calibrate, and operate a continuous monitoring system, in full compliance with the requirements found at 40 CFR 60.13 and 40 CFR part 60, appendices B and F, to accurately measure the mass emission rate in pounds per hour of SO_2 emissions entering each control device used to control emissions from the converters, and venting from the converters to the atmosphere after passing through a control device or an uncontrolled bypass stack.

b. The CMS required by Condition II.C.5.a above shall be used by the Permittee to determine compliance with the SO_2 emission limitation in Condition II.C.4 above.

c. The Permittee shall operate the monitoring system and collect data at all required intervals at all times that an affected unit is operating, except for periods of monitoring system malfunctions, repairs associated with monitoring system malfunctions, and required monitoring system quality assurance or quality control activities (including, as applicable, calibration checks and required zero and span adjustments).

6. Alternatives to CMS

The requirement in Condition II.C.5.a above to operate a CMS to measure the mass of SO_2 entering a control device or venting to the atmosphere through uncontrolled bypass stacks will be waived if the Permittee complies with one of the options in this Condition II.C.6. [40 CFR 52.145(m)(7)]

a. Acid plants

The Permittee may calculate the pounds of SO_2 entering an acid plant during a calendar day by adding the pounds of SO_2 emitted through the acid plant tail stack and 0.653 times the daily production of anhydrous sulfuric acid from the acid plant.

[40 CFR 52.145(m)(7)(i)]

b. Alkali scrubber

The Permittee may calculate the pounds of SO_2 entering an alkali scrubber during a calendar day by using the following equation:

$$M_{in,\ SO2} = M_{out,\ SO2} + SF*M_{alk}$$

Where:

$M_{in,\ SO2}$ is the calculated mass of SO_2 entering the scrubber during a calendar day;

$M_{out, SO2}$ is the mass of SO_2 emitted through the scrubber stack measured by the CEMS for the calendar day;

SF is a stoichiometric factor; and

M_{alk} is the mass of alkali added to the scrubber liquor during the calendar day.

SF shall equal:

1.14 if the alkali species is calcium oxide (CaO);

1.59 if the alkali species is magnesium oxide (MgO);

0.801 if the alkali species is sodium hydroxide (NaOH); or

Another value if the Permittee has received approval from the Regional Administrator in advance.

[40 CFR 52.145(m)(7)(ii)]

c. Uncontrolled bypass stack

The Permittee may calculate the pounds of SO_2 venting to the atmosphere through an uncontrolled bypass stack based on test data provided the facility operates according to a startup, shutdown, and malfunction plan consistent with 40 CFR 63.6(e)(3) and EPA has approved a calculation methodology for planned and unplanned bypass events.

[40 CFR 52.145(m)(7)(iii)]

7. Compliance Determination for SO_2 Control Efficiency Standard

[40 CFR 52.145(m)(6)(ii)]

The Permittee shall calculate the 365-day rolling SO_2 emission control efficiency for the converters required by Condition II.C.4 above for each calendar day in accordance with the following procedure:

a. Step one, sum the hourly pounds of SO_2 vented to each uncontrolled bypass stack and to each control device used to control emissions from the converters for the current calendar day and the preceding three-hundred-sixty-four (364) calendar days, to calculate the total pounds of pre-control SO_2 emissions over the most recent three-hundred-sixty-five (365) calendar day period;

b. Step two, sum the hourly pounds of SO_2 vented to each uncontrolled bypass stack and emitted from the release point of each control device used to control emissions from the converters for the current calendar day and the preceding three-hundred-sixty-four (364) calendar days, to calculate the total pounds of post-control SO_2 emissions over the most recent three-hundred-sixty-five (365) calendar day period;

c. Step three, divide the total amount of post-control SO_2 emissions

calculated from Step two by the total amount of pre-control SO_2 emissions calculated from Step one, subtract the resulting ratio from one, and multiply the difference by 100 percent to calculate the 365-day rolling SO2 emission control efficiency as a percentage.

8. Recordkeeping Requirements

No later than January 1, 2018, the Permittee shall maintain the following records for at least five years:

[40 CFR 52.145(m)(9)]

a. All data from the continuous monitoring system required by Condition II.C.5 above, including the date, place, and time of sampling or measurement; parameters sampled or measured; and results.

[40 CFR 52.145(m)(9)(i)]

b. Records of quality assurance and quality control activities for the CMS required by Condition II.C.5 above, including, but not limited to, any records required by 40 CFR part 60, appendix F, Procedure 1.

[40 CFR 52.145(m)(9)(ii)]

c. Records of all major maintenance activities conducted on emission units, air pollution control equipment, and the CMS required by Condition II.C.5 above. [40 CFR 52.14 (m)(9)(iii)]

d. Any other records required by 40 CFR part 60, subpart F, or 40 CFR part 60, appendix F, Procedure 1.

[40 CFR 52.145(m)(9)(iv)]

e. Records of all monitoring required by Condition II.C.3 above.

[40 CFR 52.145(m)(9)(v)]

f. Records of daily sulfuric acid production in tons per day of pure, anhydrous sulfuric acid if the owner/operator chooses to use the alternative compliance determination method in Condition II.C.6.a above.

[40 CFR 52.145(m)(9)(vi)]

g. Records of daily alkali consumption in tons per day of pure, anhydrous alkali if the Permittee chooses to use the alternative compliance determination method in Condition II.C.6.b above.

[40 CFR 52.145(m)(9)(vii)]

h. Records of planned and unplanned bypass events and calculations used to determine emissions from bypass events if the owner/operator chooses to use the alternative compliance determination method in Condition 0 above.

[40 CFR 52.145(m)(9)(viii)]

9. Reporting Requirements

All reports required under this Condition II.C.11 shall be submitted by the Permittee to the Director, Enforcement Division (Mail Code ENF-2-1), U.S. Environmental Protection Agency, Region 9, 75 Hawthorne Street, San Francisco,

California 94105-3901. All such reports shall be submitted within 30 days after the applicable compliance date of January 1, 2018 and at least semiannually thereafter, within 30 days after the end of a semiannual period. The Permittee may submit reports more frequently than semiannually for the purposes of synchronizing reports required under this Condition with other reporting requirements, such as the title V monitoring report required by 40 CFR 70.6(a)(3)(iii)(A) (i.e., Condition I.B of Attachment "B"), but at no point shall the duration of a semiannual period exceed six months.

[40 CFR 52.145(m)(10)]

a. Excess Emissions Reports

(1) The Permittee shall promptly submit excess emissions reports for the SO_2 emissions control efficiency limit in Condition II.C.4 above. Excess emissions means emissions that exceed the emissions limit specified in Condition II.C.4 above. The reports shall include the magnitude, date(s), and duration of each period of excess emissions, specific identification of each period of excess emissions that occurs during startups, shutdowns, and malfunctions of the unit, the nature and cause of any malfunction (if known), and the corrective action taken or preventative measures adopted. For the purpose of this Condition II.C.9.a(1) promptly shall mean within 30 days after the end of the month in which the excess emissions were discovered.

[40 CFR 52.145(m)(10)(i)]

(2) When no excess emissions have occurred or the CMS required by Condition II.C.4 above has not been inoperative, repaired, or adjusted during the reporting period, the Permittee shall state such information in the semiannual report.

[40 CFR 52.145(m)(10)(iv)]

b. Continuous Monitoring System Performance Reports

The Permittee shall submit CMS performance reports, to include dates and duration of each period during which the CMS was inoperative (except for zero and span adjustments and calibration checks), reason(s) why the CMS was inoperative and steps taken to prevent recurrence, and any CMS repairs or adjustments. The Permittee shall submit reports semiannually.

[40 CFR 52.145(m)(10)(ii)]

c. Performance Tests

The Permittee shall submit results of any CMS performance tests required by Condition II.C.4 above under 40 CFR part 60, appendix F, Procedure 1 (Relative Accuracy Test Audits, Relative Accuracy Audits, and Cylinder Gas Audits).

[40 CFR 52.145(m)(10)(iii)]

10. Notifications Requirements

a. The Permittee shall notify EPA of commencement of construction of any

equipment which is being constructed to comply with the capture or emission limits in Condition II.C.1 or II.C.4 above.

[40 CFR 52.145(m)(11)(i)]

b. The Permittee shall submit semiannual progress reports on construction of any such equipment.

[40 CFR 52.145(m)(11)(ii)]

c. The Permittee shall submit notification of initial startup of any such equipment.

[40 CFR 52.145(m)(11)(iii)]

11. Permit Shield

Compliance with requirements of Condition II.C above shall be deemed compliance with 40 CFR 52.145(m)(1), (m)(3), (m)(4), (m)(5)(i), and (m)(6)(i) to (iii), (m)(7), (m)(8), (m)(9), (m)(10), and (m)(11).

[A.A.C. R18-2-325]

D. Equipment Operations

1. Operation and Maintenance

At all times, including periods of startup, shutdown, and malfunction, the Permittee shall, to the extent practicable, maintain and operate the batch converters and electric furnace including associated air pollution control equipment in a manner consistent with good air pollution control practices for minimizing emissions. Pollution control equipment shall be designed and capable of operating properly to minimize emissions during all expected operating conditions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Regional Administrator which may include, but is not limited to, monitoring results, review of operating and maintenance procedures, and inspection of the unit. [40 CFR 52.145(m)(12)]

2. Permit Shield

Compliance with requirements of Condition II.D.1 above shall be deemed compliance with 40 CFR 52.145(m)(12).

[A.A.C. R18-2-325]

III. MATERIAL HANDLING AND BEDDING PLANT

A. Emission Limitations and Standards

1. Until Project startup, the Permittee shall not exceed the emission rate limits in Attachment "C" for particulate matter emissions from the flux bin, revert bin, coal bin, and concentrate bin.

[Condition II.E of Att. B of Installation Permit #1232]

2. The Permittee shall not cause, allow or permit the discharge of particulate matter into the atmosphere from the stacks associated with flux bin, revert bin, coal bin, concentrate bin, and upon Project startup, from the hydrated lime silo in total quantities in excess of the amount calculated by one of the following equations:

[A.A.C. R18-2-715.A]

a. For process sources having a process weight rate of 60,000 pounds per hour (30 tons per hour) or less, the maximum allowable emissions shall be determined by the following equation:

$E = 4.10P^{0.67}$

Where

E = the maximum allowable particulate emissions rate in pounds-mass per hour.

P = the process weight rate in tons-mass per hour.

b. For process sources having a process weight rate greater than 60,000 pounds per hour (30 tons per hour), the maximum allowable emissions shall be determined by the following equation:

$E = 55.0P^{0.11} - 40$

Where "E" and "P" are defined as indicated in Condition III.A.2.a above.

3. The Permittee shall not cause, allow or permit to be emitted into the atmosphere, any plume or effluent from any point source that exceeds 20% opacity as measured by EPA Reference Method 9.

[A.A.C. R18-2-702.B.3]

B. Air Pollution Control Requirements

1. *The Permittee shall* maintain and *operate the baghouses associated with the flux bin, revert bin, coal bin and concentrate bin for minimizing particulate matter emissions.*

[A.A.C. R18-2-306.A.2 & -331.A.3.e]
[Material permit conditions are identified by italics and underline]

2. *Upon Project startup, the Permittee shall install,* maintain and *operate the baghouses associated with hydrated lime silo for minimizing particulate matter emissions.*

[A.A.C. R18-2-306.A.2, -331.A.3.d, and e]
[Material permit conditions are identified by italics and underline]

3. *The Permittee shall* maintain and *operate the water sprays associated with revert separation device, flux bin, revert bin, coal bin, and concentrate bin for minimizing particulate matter emissions*.

[A.A.C. R18-2-306.A.2 & A.A.C. R18-2-331.A.3.e]
[Material permit conditions are identified by italics and underline]

4. *The Permittee shall install* and maintain *a cover or equivalent control on the concentrate storage facility for minimizing particulate matter emissions.*

[A.A.C. R18-2-306.A.2 & A.A.C. R18-2-331.A.3.d]

C. [Material permit conditions are identified by italics and underline]Monitoring,

Recordkeeping, and Reporting Requirements

1. Opacity

A certified Method 9 observer shall conduct a bi-weekly (once in two weeks) visual survey of visible emissions from the stacks associated with the material handling and bedding plant, when in operation, as per the procedure in Condition I.E above.

[A.A.C. R18-2-306.A.3.c]

2. Particulate Matter Emissions

a. At the end of every calendar month, the Permittee shall calculate monthly emissions of particulate matter for the flux bin, revert bin, coal bin, concentrate bin by multiplying the average hourly emission rate from the most recent performance test by the hours of operation of the material handling and bedding plant during the calendar month. The Permittee shall calculate rolling 12-month emissions (sum of the current month and prior eleven (11) most recent months).

[A.A.C. R18-2-306.A.3.c]

b. The Permittee shall maintain records of the monthly hours of operation, and rolling 12-month hours of operation for the material handling and bedding plant.

[A.A.C. R18-2-306.A.3.c]

c. The Permittee shall maintain records of the monthly and rolling 12-month total of particulate matter emissions from the concentrate, flux, coal, and revert bins from the material handling and bedding plant (sum of the current month and prior eleven (11) most recent months).

[A.A.C. R18-2-306.A.3.c]

d. If the performance tests in Condition III.D below show a particulate matter emission rate of 0.073 lb/hour or lower, the Permittee will not be required to perform the monitoring stipulated in Conditions III.C.2.a through III.C.2.c above.

[A.A.C. R18-2-306.A.3.c]

D. Performance Testing Requirements

Until Project startup, the Permittee shall conduct or cause to be conducted, performance tests on two representative stacks from the flux bin, revert bin, coal bin and concentrate bin in the first year of the permit term to show compliance with the emission limits specified in Attachment "C." EPA Reference Method 5 in 40 CFR 60, Appendix A shall be used to determine emissions of PM.

[A.A.C. R18-2-306.A.3.c and -312]

E. Permit Shield

Compliance with requirements of Condition III above shall be deemed compliance with Condition II.E of Att. B of Installation Permit #1232, A.A.C. R18-2-702.B.3, and -715.A.

[A.A.C. R18-2-325]

IV. PROCESS GASES FROM ISASMELT® FURNACE, ELECTRIC FURNACE, AND CONVERTERS (ACID PLANT TAIL GAS STACK)

A. Particulate Matter and Opacity

1. Emission Limitations and Standards

a. Until Project startup, the Permittee shall not exceed the particulate matter emission rate from the acid plant tail gas stack in Attachment "C".

[Condition II.E of Att. B of Installation Permit #1232]

b. The Permittee shall not cause, allow or permit the discharge of particulate matter into the atmosphere in excess of the amounts calculated by one of the following equations:

[A.A.C. R18-2-715.A]

(1) For process sources having a process weight rate of 60,000 pounds per hour (30 tons per hour) or less, the maximum allowable emissions shall be determined by the following equation:

$E = 4.10P^{0.67}$

Where:

E = the maximum allowable particulate emissions rate in pounds-mass per hour.

P = the process weight rate in tons-mass per hour of all materials introduced into a process source, including fuels, where these contribute to pollution generated by the source.

(2) For process sources having a process weight rate greater than 60,000 pounds per hour (30 tons per hour), the maximum allowable emissions shall be determined by the following equation:

$E = 55P^{0.11} - 40$

Where "E" and "P" are defined as indicated in Condition IV.A.1.b(1) above.

c. The Permittee shall not discharge or cause to be discharged to the atmosphere any process off-gas that contains non-sulfuric acid particulate matter in excess of 6.2 mg/dscm as measured using the test methods specified in Condition IV.A.3.d below.

[40 CFR 63.1444(b)(1) and 40 CFR 52.145(m)(4)(iii)]

d. The Permittee shall not cause to be discharged from the acid plant tail stack, any visible emissions which exhibit greater than 20 percent opacity.

[40 CFR 60.164(b)]

2. Monitoring, Recordkeeping, and Reporting Requirements

a. Opacity

A certified Method 9 observer shall conduct a bi-weekly (once in two weeks) visual survey of visible emissions from the acid plant tail gas as per the procedure in Condition I.E of this Attachment.

[A.A.C. R18-2-306.A.3.c]

b. Particulate Matter Emissions

(1) Until Project startup, the Permittee shall comply with the following Conditions:

[A.A.C. R18-2-306.A.3.c]

(a) At the end of every calendar month, the Permittee shall calculate monthly emissions of particulate matter from the acid plant tail stack by multiplying the average hourly emission rate from the most recent performance test under Condition IV.A.3.a below by the number of hours of operation of the acid plant during the calendar month. The Permittee shall calculate rolling 12-month emissions (sum of the current month and prior eleven (11) most recent months).

(b) The Permittee shall maintain records of the monthly hours of operation of the acid plant and the year-to-date total, i.e., the sum of the current month and the eleven (11) previous months.

(c) The Permittee shall maintain records of the monthly and rolling 12-month particulate matter emissions (sum of the current month and prior eleven (11) most recent months).

(2) No later than 180 days from Project startup, the Permittee shall comply with the following:

[A.A.C. R18-2-306.A.3.c]

(a) The Permittee shall calculate and record monthly particulate matter (PM, PM_{10} and $PM_{2.5}$) emissions from the tail gas stack by multiplying the average hourly emission rate derived from the two most recent performance tests under Condition IV.A.3.b below by the number of hours of operation of the acid plant during the calendar month. During the period when only the initial test data is available, the Permittee shall use the hourly emissions rate from the initial test.

(b) The Permittee shall maintain records of monthly hours of operation of the acid plant.

(c) The monthly emissions calculated and recorded pursuant to Condition IV.A.2.b(2)(a) above shall be used to demonstrate compliance with the emission limits in

Condition II.B.3.a of this Attachment.

3. Performance Testing Requirements

a. Until Project startup, the Permittee shall conduct or cause to be conducted, annual performance tests on the acid plant tail gas stack for Particulate Matter (PM) to show compliance with the emission limits specified in Condition IV.A.1.a above. Arizona Method A1 shall be used to determine the emissions of PM.

[A.A.C. R18-2-306.A.3.c and -312]

b. No later than 180 days from Project startup, the Permittee shall conduct or cause to be conducted, an initial performance test on the acid plant tail gas stack for particulate matter emissions. Subsequent performance tests shall be conducted annually. EPA Reference Method 5 in 40 CFR 60 Appendix A, EPA Reference Method 202 specified in 40 CFR 51, Appendix M, and AZ Method A1 shall be used to determine the emissions of PM. All PM measured by the above reference method shall be considered to have an aerodynamic diameter less than 2.5 microns, or EPA Reference Method 201 or 201A and Method 202 specified in 40 CFR 51, Appendix M shall be used to determine emissions of PM_{10} and $PM_{2.5}$.

[A.A.C. R18-2-306.A.3.c and -312]

c. The Permittee shall conduct an annual EPA Reference Method 9 opacity observation for the acid plant tail gas stack.

[A.A.C. R18-2-306.A.3.c and -312]

d. To demonstrate continuous compliance with the emission limitation in Condition IV.A.1.c above, the Permittee shall conduct annual performance tests according to the test methods specified below.

[40 CFR 63.1453(a)(2) and 40 CFR 52.145(m)(6)(iii)]

(1) The Permittee shall determine the concentration of non-sulfuric acid particulate matter emissions according to the following test methods in Appendix "A" of 40 CFR 60:

[40 CFR 63.1450(b)(1)]

(a) Method 1 to select sampling port locations and the number of traverse points. Sampling ports shall be located at the outlet of the control device and prior to any releases to the atmosphere.

(b) Method 2, 2F, or 2G to determine the volumetric flow rate of the stack gas.

(c) Method 3, 3A, or 3B to determine the dry molecular weight of the stack gas.

(d) Method 4 to determine the moisture content of the stack gas.

(e) Method 5B to determine the non-sulfuric acid particulate

matter emissions.

(2) The Permittee shall conduct three separate test runs for each performance test. Each test run shall have a minimum sampling time of 240 minutes and a minimum sampling volume of 3.4 dscm. For the purpose of determining compliance with the non-sulfuric acid particulate matter emission limit, the arithmetic mean of the results for the three separate test runs shall be used.

[40 CFR 63.1450(b)(2)]

(3) The Permittee shall submit test reports as specified in 40 CFR part 63, subpart A.

[40 CFR 52.145(m)(10)(v)]

4. Permit Shield

Compliance with requirements of Condition IV.A above shall be deemed compliance with Condition II.E of Att. B of Installation Permit #1232, A.A.C. R18-2-715.A, 40 CFR 60.164(b), 40 CFR 63.1444(b)(1), (b)(1), (b)(2), 1453(a)(2), 40 CFR 52.145(m)(4)(iii), (m)(6)(iii), and (m)(10)(v)..

[A.A.C. R18-2-325]

B. Lead

1. Emission Limitations

Until Project startup, the Permittee shall not exceed the emission limit for Lead specified in Attachment "C".

[Condition I.A of Minor Revision #1232R1 to Installation Permit1232]

2. Monitoring, Recordkeeping, and Reporting Requirements

a. Until Project startup, the Permittee shall comply with the following:

(1) At the end of every calendar month, the Permittee shall calculate monthly emissions of lead from the acid plant tail stack by multiplying the average hourly emission rate from the most recent performance test under Condition IV.B.3.a below by the number of hours of operation of the acid plant during the calendar month. The Permittee shall calculate rolling 12-month emissions (sum of the current month and prior eleven (11) most recent months).

[A.A.C. R18-2-306.A.3.c]

(2) The Permittee shall maintain records of the monthly hours of operation of the acid plant and the year-to-date total, i.e., the sum of the current month and the eleven (11) previous months.

[A.A.C. R18-2-306.A.3.c]

(3) The Permittee shall maintain records of the monthly and rolling 12-month lead emissions (sum of the current month and prior eleven (11) most recent months).

[A.A.C. R18-2-306.A.3.c]

b. No later than 180 days from Project startup, the Permittee shall comply with the following:

[A.A.C. R18-2-306.A.3.c]

(1) The Permittee shall calculate and record monthly lead emissions from the tail gas stack by multiplying the average hourly emission rate from the two most recent performance tests under Condition IV.B.3.b below by the number of hours of operation of the acid plant during the calendar month. During the period when only the initial test data is available, the Permittee shall use the hourly emissions rate from the initial test.

(2) The Permittee shall maintain records of monthly hours of operation of the acid plant.

(3) The monthly emissions calculated and recorded pursuant to Condition IV.B.2.b(1) above shall be used to demonstrate compliance with the emission limits in Condition II.B.4.a of this Attachment.

3. Performance Testing Requirements

a. Until Project startup, the Permittee shall conduct annual performance tests on the acid plant tail stack for emissions of Lead using EPA Reference Method 29.

[A.A.C. R18-2-306.A.3.c and -312]

b. No later than 180 days from Project startup, the Permittee shall conduct or cause to be conducted, an initial performance test on the acid plant tail gas stack for lead emissions. Subsequent performance tests shall be conducted annually. EPA Reference Method 29 shall be used for determining lead emissions.

[A.A.C. R18-2-306.A.3.c and -312]

4. Permit Shield

Compliance with requirements of Condition IV.B above shall be deemed compliance with Condition I.A of Minor Revision #1232R1 to Installation Permit1232.

[A.A.C. R18-2-325]

C. Sulfur Dioxide (SO_2)

1. Emission Limitations and Standards

a. Until Project startup, the Permittee shall not exceed emission limit for sulfur dioxide specified in the Attachment "C" for the acid plant tail gas stack.

[Condition II.E of Att B of Installation Permit #1232]

b. The Permittee shall not cause to be discharged into the atmosphere from the acid plant tail stack gases containing SO_2 in excess of 0.065 percent by

volume.

[40 CFR 60.163(a)]

2. Air Pollution Control Requirements

a. *At all times, including periods of startup, shutdown, and malfunction, the Permittee shall, to the extent practicable,* maintain and *operate the acid plant in a manner consistent with good air pollution control practice for minimizing SO_2 emissions from the process gases associated with the IsaSmelt® furnace, electric furnace, and the converters*.

[40 CFR 60.11(d) and A.A.C. R18-2-331.A.3.e]
[Material permit conditions are identified by italics and underline]

b. *Until Project startup, the Permittee shall, to the extent practicable,* maintain and *operate the chemical scrubber in a manner consistent with good air pollution control practice for minimizing SO_2 emissions from the process gases associated with the IsaSmelt® furnace, electric furnace, and the converters*.

[40 CFR 60.11(d) and A.A.C. R18-2-331.A.3.e]
[Material permit conditions are identified by italics and underline]

c. *Upon Project startup, the Permittee shall, install, operate,* and maintain *the scrubber using caustic as the reagent, in a manner consistent with good air pollution control practice for minimizing SO_2 emissions*.

[40 CFR 60.11(d) and A.A.C. R18-2-331.A.3.d and e]
[Material permit conditions are identified by italics and underline]

d. The Permittee shall not actively aerate the electric furnace.

[40 CFR 52.145(m)(4)(iv)]

3. Monitoring, Recordkeeping and Reporting Requirements

a. Except during periods of system breakdowns, repairs, calibration checks and zero and span adjustments, the Permittee shall continue to operate a continuous monitoring system (CMS) to monitor and record SO_2 emissions from the acid plant tail gas stack. The span of this system shall be set at a sulfur dioxide concentration of 0.2 percent by volume.

[40 CFR 60.13(e) and 40 CFR 60.165(b)(2)]

b. Six-hour average SO_2 concentrations shall be calculated and recorded daily for the four consecutive 6-hour periods of each operating day. Each six-hour average shall be determined as the arithmetic mean of the appropriate six contiguous one-hour average SO_2 concentrations provided by the continuous monitoring system.

[40 CFR 60.165(c)]

c. For reporting purposes, periods of excess emissions that shall be reported are defined as all six-hour periods during which the average emissions of SO_2, as measured by the continuous monitoring system, exceed the standard (0.065 percent by volume). The Administrator will not consider emissions in excess of the level of the standard for less than or equal to 1.5 percent of the six-hour period during the quarter as indicative of a potential violation of 60.11(d), provided the acid plant is maintained and operated

in a manner consistent with good air pollution control practice for minimizing emissions during these periods. Emissions in excess of the level of the standard during periods of startup, shutdown, and malfunction are not to be included within the 1.5 percent.

[40 CFR 60.165(d)(2)]

d. The SO_2 CMS shall comply with the requirements for Continuous Monitoring Systems under Condition 0 of this Attachment.

[A.A.C. R18-2-306.A.3.c]

e. Utilizing SO_2 CMS data in Condition IV.C.3.a above, the Permittee shall calculate and record hourly SO_2 emissions from the acid plant tail gas stack for the purpose of demonstrating compliance with sulfur dioxide emission limits in Condition II.B.1.a of this Attachment.

[A.A.C. R18-2-306.A.3.c]

4. Permit Shield

Compliance with requirements of Condition IV.C above shall be deemed compliance with Condition II.E of Att. B of Installation Permit #1232, 40 CFR 60.163(a), 165(b)(2), 165(c), and 165(d)(2).

[A.A.C. R18-2-325]

D. Nitrogen Oxides

1. Emission Limitations/Standards

a. The Permittee shall limit the nitrogen oxide emissions from the tail gas stack of the acid plant to not more than 425 tons per year. The average hourly nitrogen oxides emission rate shall be no greater than 97.5 pounds per hour.

[Condition II.A.1 of Att. B of Significant Revision #1000266 to Installation Permit #1232, A.A.C. R18-2-406.A.4]

b. Upon Project startup, the Permittee shall limit the NO_X emissions from the tail gas stack to not more than 175 tons per year on a 365-day rolling total basis.

[SIP Rule R18-2-306.02.A]

2. Monitoring, Recordkeeping, and Performance Testing Requirements

a. Until Project startup, the Permittee shall comply with the Conditions IV.D.2.a(1) through (4) below to demonstrate compliance with the emission standard specified in Condition IV.D.1.a above:

(1) The Permittee shall conduct or cause to be conducted, semi-annual performance tests on the acid plant tail gas stack for nitrogen oxides. EPA Reference Method 7E shall be used to determine the emissions of NO_X. The performance test will consist of three runs, each lasting 4 hours.

[A.A.C. R18-2-306.A.3.c and -312]

(2) At the end of every calendar month, the monthly emissions of

nitrogen oxides shall be calculated by multiplying the average hourly emission rate from the most recent performance test by the hours of operation of the acid plant during the calendar month. The annual emissions shall be calculated as the rolling sum of that calendar month and prior eleven (11) most recent months.

[A.A.C. R18-2-306.A.3.c]

(3) The Permittee shall maintain records of the monthly hours of operation of the acid plant and the year-to-date total, i.e., the sum of the current month and the eleven (11) previous months.

[A.A.C. R18-2-306.A.3.c]

(4) The Permittee shall maintain records of the monthly emissions of nitrogen oxides from the acid plant and the year-to-date total, i.e., the sum of the current month and the eleven (11) previous months.

[A.A.C. R18-2-306.A.3.c]

b. Upon Project startup, the Permittee shall comply with the following:

(1) *Except during periods of system breakdowns, repairs, calibration checks and zero and span adjustments, the Permittee shall install,* calibrate, operate and maintain *a continuous monitoring system (CMS) to monitor and record nitrogen oxide emissions from the acid plant tail stack.* The NO_X CMS shall comply with the requirements for continuous monitoring systems under Condition 0 of this Attachment.

[A.A.C. R18-2-306.A.3.c and A.A.C. R18-2-331.A.3.c]
[Material permit conditions are identified by italics and underline]

(2) The Permittee shall use NO_X CMS data to calculate and record hourly and daily NO_X emissions from the tail gas stack.

[A.A.C. R18-2-306.A.3.c]

(3) No later than 180 days from Project startup, the Permittee shall demonstrate compliance with NO_X emission limitations in Condition IV.D.1.b above as follows:

[A.A.C. R18-2-306.A.3.c]

(a) For the first 365 days, at the end of each day, the Permittee shall calculate and record daily running total of NO_X emissions from the tail gas stack.

(b) After the first 365 days, at the end of each day, the Permittee shall calculate and record 365-day rolling total of NO_X emissions from the tail gas stack.

3. Permit Shield

Compliance with requirements of Condition IV.D above shall be deemed compliance with Condition II.A.1 of Att. B of Significant Revision #1000266 to Installation Permit #1232.

[A.A.C. R18-2-325]

V. CAPTURED FUGITIVES FROM THE ISASMELT® FURNACE AND THE ELECTRIC FURNACE (VENT FUME STACK)

A. Particulate Matter and Opacity

1. Emission Limitations/Standards

a. Until Project startup, the Permittee shall not exceed the emission rate limit specified for the vent fume stack in Attachment "C" for particulate matter.
[Condition II.E of Att B of Installation Permit #1232]

b. The Permittee shall not cause, allow or permit the discharge of particulate matter from the vent fume stack into the atmosphere in excess of the amounts calculated by one of the following equations:
[A.A.C. R18-2-715.A]

(1) For process sources having a process weight rate of 60,000 pounds per hour (30 tons per hour) or less, the maximum allowable emissions shall be determined by the following equation:

$E = 4.10P^{0.67}$

Where:

E = the maximum allowable particulate emissions rate in pounds-mass per hour.

P = the process weight rate in tons-mass per hour of all materials introduced into a process source, including fuels, where these contribute to pollution generated by the source.

(2) For process sources having a process weight rate greater than 60,000 pounds per hour (30 tons per hour), the maximum allowable emissions shall be determined by the following equation:

$E = 55P^{0.11} - 40$

Where "E" and "P" are defined as indicated in Condition V.A.1.b(1) above.

c. The Permittee shall not discharge to the atmosphere from the capture system used to comply with Condition V.A.2.b below any gases that contain total particulate matter in excess of 23 mg/dscm as measured using the test methods specified in Condition V.A.4.c below.
[40 CFR 63.1444(b)(2)(ii)]

d. The Permittee shall not cause to be discharged into the atmosphere from the vent fume stack any visible emissions which exhibit greater than 20 percent opacity per EPA Reference Method 9.
[A.A.C. R18-2-715.D]

2. Air Pollution Control Requirements

a. *The Permittee shall* maintain and *operate the wet electrostatic precipitator (WESP) system associated with the vent fume stack in a manner consistent with good air pollution control practice for minimizing particulate matter emissions*.

[A.A.C. R18-2-306.A.2 and A.A.C. R18-2-331.A.3.e]
[Material permit conditions are identified by italics and underline]

b. The Permittee shall operate a capture system that collects the gases and fumes released from the tapping port in use at all times when copper matte or slag is tapped from the smelting furnace. The design and placement of the capture system required shall be such that the tapping port opening, launder, and receiving vessel (e.g., ladle, slag pot) are positioned within the confines or influence of the capture system's ventilation draft during those times when the copper matte or slag is flowing from the tapping port opening.

[40 CFR 63.1444(b)(2)(i)]

c. The Permittee shall maintain the hourly average values for power for the WESPs within the limits established during the most recent performance test.

[40 CFR 63.1444(h)(2)]

d. The Permittee shall maintain and operate a bypass duct on the Electric Furnace in accordance with good air pollution control practices to allow the gases to be directed to the vent fume system or the Aisle Scrubber. The Permittee shall not vent any gases directly to atmosphere at the electric furnace.

[A.A.C. R18-2-306.A.2]

3. Monitoring, Recordkeeping, and Reporting Requirements

a. Opacity Monitoring for the Vent Fume Stack

A certified Method 9 observer shall conduct a bi-weekly (once in two weeks) visual survey of visible emissions from the vent fume stack as per the procedure in Condition I.E of this Attachment.

[A.A.C. R18-2-306.A.3.c]

b. Emissions Monitoring for the Vent Fume Stack

(1) Until Project startup, the Permittee shall comply with the following requirements

(a) At the end of every calendar month, the Permittee shall calculate the monthly emissions of particulate matter from the vent fume stack by multiplying the average hourly emission rate determined from the most recent performance test under Condition V.A.4.a below by the hours of operation of the process equipment associated

with the vent fume stack during the calendar month. The Permittee shall calculate rolling 12-month emissions (sum of the current month and prior eleven (11) most recent months).

[A.A.C. R18-2-306.A.3.c]

(b) The Permittee shall maintain records of the monthly and rolling 12-month (sum of the current month and prior eleven (11) most recent months) hours of operation of the process equipment associated with the vent fume stack.

[A.A.C. R18-2-306.A.3.c]

(c) The Permittee shall maintain records of the monthly and rolling 12-month (sum of the current month and prior eleven (11) most recent months) emissions of particulate matter from the vent fume stack.

[A.A.C. R18-2-306.A.3.c]

(d) The Permittee shall maintain records of the monthly average stack flow rate on a 12-month rolling basis.

[A.A.C. R18-2-306.A.3.c]

(2) No later than 180 days from Project startup, the Permittee shall comply with the following requirements:

[A.A.C. R18-2-306.A.3.c]

(a) The Permittee shall calculate and record monthly particulate matter (PM, PM_{10} and $PM_{2.5}$) emissions from the vent fume stack by multiplying the average hourly emission rate from the two most recent performance test under Condition V.A.4.b below by vent fume collection system fan hours of operation (representative of the emissions vented through the vent fume stack) during the calendar month from Condition V.A.3.b(2)(b) below. During the period when only the initial test data is available, the Permittee shall use the hourly emissions rate from the initial test.

(b) The Permittee shall maintain records of monthly hours of operation of the fume system collection fans.

(c) The monthly emissions calculated and recorded pursuant to Condition V.A.3.b(2)(a) above shall be used to demonstrate compliance with the emission limits in Condition II.B.3.a of this Attachment.

c. WESPs

The Permittee shall install, operate, and maintain *a continuous parameter monitoring system (CPMS) to monitor the power for the Wet Electrostatic Precipitators (WESPs) according to the equipment manufacturer's specifications and the following requirements*:

[40 CFR 63.1452(d) and A.A.C. R18-2-331.A.3.c]
[Material permit conditions are indicated by italics and underline]

(1) *Locate the sensor(s) used for monitoring in or as close to a position that provides a representative measurement of the parameter being monitored.*

(2) Determine the hourly average of all recorded readings.

(3) Conduct calibration and validation checks any time the sensor exceeds the manufacturer's specifications or a new sensor is installed.

(4) At least monthly, inspect all components for integrity, all electrical connections for continuity, and all mechanical connections for leakage.

(5) Record the results of each inspection, calibration, and validation check.

4. Performance Testing Requirements

a. Until Project startup, if the stack flow exceeds 500,000 cfm in a rolling 12-month period, the Permittee shall conduct or cause to be conducted, an annual performance test on the vent fume stack for Particulate Matter (PM) to show compliance with the emission limits specified in Condition V.A.1.a and b above. Arizona Method A1 shall be used to determine the emissions of PM.

[A.A.C. R18-2-306.A.3.c and -312]

b. No later than 180 days from Project startup, the Permittee shall conduct or cause to be conducted, an initial performance tests on the vent fume stack for particulate matter emissions. Subsequent performance tests shall be conducted annually to show compliance with Condition II.B.3.a of this Attachment. EPA Reference Method 5 in 40 CFR 60 Appendix A and EPA Reference Method 202 specified in 40 CFR 51, Appendix M shall be used to determine the emissions of PM. All PM measured by the above reference method shall be considered to have an aerodynamic diameter less than 2.5 microns, or EPA Reference Method 201 or 201A and Method 202 specified in 40 CFR 51, Appendix M shall be used to determine emissions of PM_{10} and $PM_{2.5}$.

[A.A.C. R18-2-306.A.3.c and -312]

c. The Permittee shall conduct annual performance tests according to the following procedures to demonstrate compliance with emission standard in Condition V.A.1.c above.

[40 CFR 63.1450(a) and 1453(a)(1)(ii)]

(1) Determine the concentration of total particulate matter according to the test methods in Appendix A to 40 CFR Part 60 as specified in paragraphs (a) through (e) below:

(a) Method 1 to select sampling port locations and the number of traverse points. Sampling ports shall be located at the outlet of the control device and prior to any releases to the atmosphere.

(b) Method 2, 2F, or 2G to determine the volumetric flow rate of the stack gas.

(c) Method 3, 3A, or 3B to determine the dry molecular weight of the stack gas.

(d) Method 4 to determine the moisture content of the stack gas.

(e) Method 5, 5D, or 17, as applicable, to determine the concentration of total particulate matter. The Permittee can also use ASTM D4536-96 incorporated by reference in §63.14 as an alternative to the sampling equipment and operating procedures in Method 5 or 17 when testing a positive pressure baghouse, but the Permittee shall use the sample traverse location and number of sampling points described in Method 5D.

(2) As an alternative to using the applicable method specified in Condition V.A.4.c(1)(e) below, the Permittee may determine total particulate matter emissions from the control device using Method 29 in Appendix A of 40 CFR Part 60 of this chapter provided that the Permittee follows the procedures and precautions prescribed in Method 29. If the control device is a positive pressure baghouse, the Permittee shall also follow the measurement specified in sections 4.1 through 4.3 of Method 5D.

(3) The Permittee shall conduct three separate test runs for each performance test. Each test run shall have a minimum sampling time of 60 minutes and a minimum sampling volume of 0.85 dscm. For the purpose of determining compliance with the applicable total particulate matter emission limit, the arithmetic mean of the results for the three separate test runs is used.

d. For the WESPs subject to operating limitation under Condition V.A.3.c above, the Permittee shall establish site-specific operating limit(s) for the operating parameters according to the following procedures:

[40 CFR 63.1450(a)(5)]

(1) Using the CPMS in Condition V.A.3.c above, the Permittee shall measure and record the selected operating parameters for the WESPs during each run of the total particulate matter performance test.

(2) Compute and record the hourly average value for each of the selected operating parameters for each individual test run. The operating limits are the lowest value or the highest value, as

appropriate for the selected operating parameter, measured in any of the three runs that meet the applicable emission limit.

(3) The Permittee shall prepare and keep records of written documentation to support the selection of the operating parameters used for the WESPs. This documentation shall include a description of each selected parameter, a rationale for why the Permittee chose the parameter, a description of the method used to monitor the parameter, and the data recorded during the performance test and used to set the operating limit(s).

5. Continuous Compliance Demonstration

a. The Permittee shall demonstrate continuous compliance with the particulate matter emission limit in Condition V.A.1.c above by maintaining the average concentration of total particulate matter in the gases discharged from the affected sources at or below the applicable emission limit, and by conducting performance tests no less frequently than once per year.

[40 CFR 63.1453(a)(1)]

b. The Permittee shall demonstrate continuous compliance for the WESPs by meeting the following requirements:

[40 CFR 63.1453(e)]

(1) Maintain the hourly average of the parameter(s) selected in Condition V.A.4.d above within the levels established during the most recent performance test;

(2) Inspect and maintain each CPMS operated according to Condition V.A.4.d(2) above and record all information needed to document conformance with these requirements; and

(3) Collect and reduce monitoring data for selected parameters according to Condition I.D.6 of this Attachment and record all information needed to document conformance with these requirements.

6. Permit Shield

Compliance with requirements of Condition V.A above shall be deemed compliance with Conditions II.E of Att. B of Installation Permit #1232, A.A.C. R18-2-715.A, D, 40 CFR 63.1444(b)(2)(i), (ii), (h), (h)(2), 1450(a)(1), (a)(5). 1452(d), 1453(a)(1)(i) and (a)(1)(ii), and 1453(e).

[A.A.C. R18-2-325]

B. Sulfur Dioxide (SO_2)

1. Emission Limitations and Standards

a. Until Project startup, the Permittee shall not exceed the emission limit for sulfur dioxide specified in Attachment "C" for the vent fume stack.

[Condition II.E of Att B of Installation Permit #1232]

b. Upon Project startup, the Permittee shall not cause to be discharged into the atmospheres from the vent fume stack any gases that contain SO_2 in excess of 0.065 percent by volume.

[40 CFR 60.163(a)]

2. Air Pollution Control Requirements

a. *Until Project startup, the Permittee shall* maintain and *operate the chemical scrubber in a manner consistent with good air pollution control practice for minimizing SO_2 emissions*.

[A.A.C. R18-2-306.A.2 and A.A.C. R18-2-331.A.3. e]
[Material permit conditions are identified by italics and underline]

b. *Upon Project startup, the Permittee shall install*, maintain, and *operate the scrubber using caustic as the reagent in a manner consistent with good air pollution control practice for minimizing SO_2 emissions from the vent fume stack*.

[40 CFR 60.11(d) and A.A.C. R18-2-331.A.3.d and e]
[Material permit conditions are identified by italics and underline]

3. Monitoring, Recordkeeping and Reporting Requirements

a. Until Project startup, the Permittee shall continue to operate a continuous monitoring system (CMS) to monitor and record SO_2 emissions from the vent fume stack.

[A.A.C. R18-2-306.A.3.c]

b. Upon Project startup, the Permittee shall comply with the following requirements.

(1) Except during periods of system breakdowns, repairs, calibration checks and zero and span adjustments, the Permittee shall continue to operate a continuous monitoring system (CMS) to monitor and record SO_2 emissions from the vent fume stack. The span of this system shall be set at a sulfur dioxide concentration of 0.2 percent by volume.

[40 CFR 60.13(e) and 165(b)(2)]

(2) Six-hour average SO_2 concentrations shall be calculated and recorded daily for the four consecutive 6-hour periods of each operating day. Each six-hour average shall be determined as the arithmetic mean of the appropriate six contiguous one-hour average SO_2 concentrations provided by the continuous monitoring system. [40 CFR 60.165(c)]

(3) For reporting purposes, periods of excess emissions that shall be reported are defined as all six-hour periods during which the average emissions of SO_2, as measured by the continuous monitoring system, exceed the standard (0.065 percent by

volume). The Director will not consider emissions in excess of the level of the standard for less than or equal to 1.5 percent of the six-hour period during the quarter as indicative of a potential violation of 60.11(d), provided the acid plant is maintained and operated in a manner consistent with good air pollution control practice for minimizing emissions during these periods. Emissions in excess of the level of the standard during periods of startup, shutdown, and malfunction are not to be included within the 1.5 percent.

[40 CFR 60.165(d)(2)]

(4) The SO_2 CMS shall comply with the requirements for continuous monitoring systems under Condition 0 of this Attachment. SO_2 CMS data shall be used to demonstrate compliance with the sulfur dioxide emission limits specified in Attachment "C" of the permit.

[A.A.C. R18-2-306.A.3.c]

(5) Utilizing SO_2 CMS data recorded in accordance with Condition V.B.3.b(1) above, the Permittee shall calculate and record hourly SO_2 emissions from the vent fume stack for the purpose of demonstrating compliance with sulfur dioxide emission limits in Conditions II.B.1.a of this Attachment.

[A.A.C. R18-2-306.A.3.c]

4. Permit Shield

Compliance with requirements of Condition V.B above shall be deemed compliance with Conditions II.E of Att. B of Installation Permit #1232, 40 CFR 60.163(a), 165(b)(2), (c), and (d)(2).

[A.A.C. R18-2-325]

C. Lead

1. Emissions Limitation and Standard

Until Project startup, the Permittee shall not exceed the emission limit for Lead specified in Attachment "C" for the vent fume stack.

[Condition II.F.2 of Att. B of Installation Permit #1232]

2. Monitoring, Recordkeeping, and Reporting Requirements

a. Until Project startup, the Permittee shall comply with the following requirements:

(1) At the end of every calendar month, the Permittee shall calculate monthly emissions of lead from the vent fume stack by multiplying the average hourly emission rate from the most recent performance test under Condition V.C.3.a below by vent fume collection system fan hours of operation (representative of the emissions vented through the vent fume stack) during the calendar month. The Permittee shall calculate rolling 12-month emissions (sum of the current month and prior eleven (11) most recent

months).

[A.A.C. R18-2-306.A.3.c]

(2) The Permittee shall maintain records of the monthly and rolling 12-month (sum of the current month and prior eleven (11) most recent months) hours of operation of the vent fume system collection fans.

[A.A.C. R18-2-306.A.3.c]

(3) The Permittee shall maintain records of the monthly and rolling 12-month lead emissions (sum of the current month and prior eleven (11) most recent months).

[A.A.C. R18-2-306.A.3.c]

b. No later than 180 days from Project startup, the Permittee shall comply with the following requirements:

[A.A.C. R18-2-306.A.3.c]

(1) The Permittee shall calculate and record monthly lead emissions from the vent fume stack by multiplying the average hourly emission rate derived from the two most recent performance test under Condition V.C.3.b below by vent fume system collection fan hours of operation (representative of the emissions vented through the vent fume stack) during the calendar month from Condition V.C.2.b(2) below. During the period when only the initial test data is available, the Permittee shall use the hourly emissions rate from the initial test

(2) The Permittee shall maintain records of monthly hours of operation of the vent fume system collection fans.

(3) The monthly emissions calculated and recorded pursuant to Condition V.C.2.b(1) above shall be used to demonstrate compliance with the emission limits in Condition II.B.4.a above.

3. Performance Testing Requirements

a. Until Project startup, the Permittee shall conduct annual performance tests on the vent fume stack for emissions of lead using EPA Reference Method 29.

[A.A.C. R18-2-306.A.3.c and -312]

b. No later than 180 days from Project startup, the Permittee shall conduct or cause to be conducted, an initial performance test on the vent fume stack for lead emissions. Subsequent performance tests shall be conducted annually. EPA Reference Method 29 shall be used for determining lead emissions.

[A.A.C. R18-2-306.A.3.c and -312]

4. Permit Shield

Compliance with requirements of Condition V.C above shall be deemed compliance with Conditions II.F.2 of Att. B of Installation Permit #1232.

[A.A.C. R18-2-325]

VI. CAPTURED FUGITIVES FROM CONVERTERS AND ANODE FURNACES (AISLE SCRUBBER STACK)

A. Applicability

The requirements under this Condition shall apply upon Project startup.

B. Particulate Matter and Opacity

1. Emission Limitations and Standards

a. The Permittee shall not cause, allow or permit the discharge of particulate matter from the aisle scrubber stack into the atmosphere in excess of the amounts calculated by one of the following equations:

[A.A.C. R18-2-715.A]

(1) For process sources having a process weight rate of 60,000 pounds per hour (30 tons per hour) or less, the maximum allowable emissions shall be determined by the following equation:

$E = 4.10P^{0.67}$

Where:

E = the maximum allowable particulate emissions rate in pounds-mass per hour.

P = the process weight rate in tons-mass per hour of all materials introduced into a process source, including fuels, where these contribute to pollution generated by the source.

(2) For process sources having a process weight rate greater than 60,000 pounds per hour (30 tons per hour), the maximum allowable emissions shall be determined by the following equation:

$E = 55P^{0.11} - 40$

Where "E" and "P" are defined as indicated in Condition VI.B.1.a(1) above.

b. The Permittee shall not cause to be discharged from the aisle scrubber stack, any visible emissions which exhibit greater than 20 percent opacity per EPA Reference Method 9.

[A.A.C. R18-2-702.B.3]

2. Air Pollution Control Requirements

a. *Upon Project startup, the Permittee shall* maintain and *operate the baghouse system associated with the anode furnaces in accordance with*

good air pollution control practices for minimizing particulate matter emissions.

[A.A.C. R18-2-306.A.2 and A.A.C. R18-2-331.A.3.e]
[Material permit conditions are identified by italics and underline]

b. Upon Project startup, the Permittee shall install, operate, and maintain a capture system in accordance with good air pollution control practice to capture process fugitive emissions from anode furnaces.

[A.A.C. R18-2-306.A.2]

c. Upon Project startup the Permittee shall install, operate, and maintain a capture system in accordance with good air pollution control practice to capture process fugitive emissions in the converter aisle.

[A.A.C. R18-2-306.A.2]

3. Monitoring, Recordkeeping, and Reporting Requirements

a. Opacity

A certified Method 9 observer shall conduct a bi-weekly (once in two weeks) survey of visible emissions from the aisle scrubber stack in accordance with Condition I.E above.

[A.A.C. R18-2-306.A.3.c]

b. Anode Furnace Baghouse

The Permittee shall install, calibrate, maintain, and continuously operate *a bag leak detection system (BLDS) at the exhaust of the anode furnace baghouse system in a manner consistent with the manufacturer's written specifications and recommendation, and in accordance with EPA's Fabric Filter Bag Leak Detection Guidance (EPA-454/R-98-015).*

[A.A.C. R18-2-306.A.3.d and -331.A.3.c]
[Material permit conditions are identified by italics and underline]

c. Compliance Assurance Monitoring (CAM) Requirements for Anode Furnace Baghouse

(1) Primary Indicators

Triboelectric signal as measured by BLDS shall be the primary indicator of anode furnace baghouse performance.

(2) Monitoring Approach

The BLDS shall be equipped with an alarm system that will alert automatically whenever measured triboelectric signal is outside of the established indicator range. The alarm shall be located where it is easily detected by plant operating personnel.

(3) Excursion Determination

(a) An excursion is defined as BLDS measured triboelectric signal outside the established indicator range

(b) If an excursion is detected, then the Permittee shall initiate an investigation within 24 hours of the first discovery of the excursion incident and take corrective action as soon as practicable to adjust or repair to minimize possible exceedances of the particulate standard.

(c) The Permittee shall log in ink or electronic format and maintain a record of installation, calibration, maintenance, and operation of the monitoring systems in accordance with Condition XIII, Attachment "A". In the case of any excursion incident, the record shall include an identification of the date and time of all excursions, their cause, and an explanation of the corrective actions taken, if any.

[A.A.C. R18-2-306.A.3.b and 40 CFR 64.6]

(4) General CAM Operation Requirements

[A.A.C. R18-2-306.A.3.b and 40 CFR 64.7]

(a) At all times, the Permittee shall maintain the monitoring equipment, including but not limited to, maintaining necessary parts for routine repairs of the monitoring equipment.

(b) Upon detecting an excursion, the Permittee shall restore operation of the anode furnaces and anode furnace baghouse to normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions. The response shall include minimizing the period of any startup, shutdown or malfunction and taking any necessary corrective actions to restore normal operation and prevent the likely recurrence of the cause of an excursion. Such actions may include initial inspection and evaluation, shutting down the affected compartment until the problem is repaired, recording that operations returned to normal without operator action (such as through response by a computerized distributed control system), or any necessary follow-up actions to return operation to within the indicator range.

(c) Determination of whether the Permittee has used acceptable procedures in response to an excursion will be based on information available, which may include but is not limited to, monitoring results, review of operation and maintenance procedures and records, and inspection of the control device, associated capture system, and the process.

(d) If the Permittee identifies a failure to achieve compliance with an emission limitation or standard for which CAM did not provide an indication of an excursion while

providing valid data, or the results of compliance or performance testing document a need to modify the existing indicator ranges or designated conditions, then the Permittee shall promptly notify the Director and, if necessary, submit a proposed modification to the permit to address the necessary monitoring changes. Such a modification may include, but is not limited to, reestablishing indicator ranges or designated conditions, modifying the frequency of conducting monitoring and collecting data, or the monitoring of additional parameters.

(5) Quality Improvement Plan (QIP) Requirements

[A.A.C. R18-2-306.A.3.b and 40 CFR 64.8]

(a) In the event that the excursions exceed 5% duration of anode furnaces' operating time for a reporting period, the Permittee shall develop and implement a QIP. The Director may otherwise specify the threshold at a higher or lower number of excursions or rely on other criteria for purposes of indicating whether the anode furnaces & the associated controls are being maintained and operated in a manner consistent with good air pollution control practices.

(b) The QIP shall include the following elements:

(i) The Permittee shall maintain a written QIP, if required, and have it available for inspection. Within 30 days of development of the QIP, the Permittee shall notify the Department in writing. The notification shall identify the equipment for which the QIP was developed.

(ii) The plan initially shall include procedures for evaluating the control performance problems and, based on the results of the evaluation procedures, the Permittee shall modify the plan to include procedures for conducting one or more of the following actions, as appropriate:

(a) Improved preventive maintenance practices;

(b) Process operation changes;

(c) Appropriate improvements to control methods;

(d) Other steps appropriate to correct control performance; and

(e) More frequent or improved monitoring (only in conjunction with one or more of steps (a) through (d)).

(iii) If required, pursuant to Condition VI.B.3.c(5)(a) above, then the Permittee shall develop and implement a QIP as expeditiously as practicable and shall notify the Director if the period for completing the improvements contained in the QIP exceeds 180 days from the date on which the need to implement the QIP was determined.

(c) Following implementation of a QIP, the Director may require the Permittee to make reasonable changes to the QIP if the QIP is found to have:

(i) Failed to address the cause of the control device performance problems; or

(ii) Failed to provide adequate procedures for correcting control device performance problems as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions.

(d) Implementation of a QIP shall not excuse the Permittee from compliance with any existing emission limitation or standard, or any existing monitoring, testing, reporting or recordkeeping requirement that may apply under federal, state or local law, or any other applicable requirements under the Act.

(6) Reporting and Recordkeeping Requirements

[A.A.C. R18-2-306.A.3.b and 40 CFR 64.9]

(a) Along with the compliance certifications required by Condition VII of Attachment "A," the Permittee shall submit to the Director monitoring reports required by this Condition VI.

(b) A monitoring report under this Condition shall include, at a minimum, the information required under Condition I.B of this Attachment, and the following information, as applicable:

(i) Summary information on the number, duration and cause (including unknown cause, if applicable) of excursions, and the corrective actions taken.

(ii) A description of the actions taken to implement a QIP during the reporting period as specified in

Condition VI.B.3.c(5)(a) above. Upon completion of a QIP, the Permittee shall include in the next summary report documentation that the implementation of the plan has been completed and reduced the likelihood of similar levels of excursions occurring.

(iii) The Permittee shall maintain records of monitoring data, corrective actions taken, any written quality improvement plan required pursuant to Condition VI.B.3.c(5)(a) above and any activities undertaken to implement a quality improvement plan, and other supporting information required to be maintained under this Condition (such as data used to document the adequacy of monitoring, or records of monitoring, maintenance or corrective actions).

(iv) Instead of paper records, the Permittee may maintain records on alternative media, such as microfilm, computer files, magnetic tape disks, or microfiche, provided that the use of such alternative media allows for expeditious inspection and review, and does not conflict with other applicable recordkeeping requirements.

d. Emissions Monitoring for the Aisle Scrubber Stack

No later than 180 days from Project startup, the Permittee shall determine the monthly particulate matter emissions from the aisle scrubber stack in accordance with following:

[A.A.C. R18-2-306.A.3.c]

(1) The Permittee shall calculate and record monthly particulate matter (PM, PM_{10} and $PM_{2.5}$) emissions from the aisle scrubber stack by multiplying the average hourly emission rate from the two most recent performance tests under Condition VI.B.4 below by the aisle scrubber collection system fan hours of operation (representative of the emissions vented through aisle scrubber stack) during the calendar month from Condition VI.B.3.d(2) below. During the period when only the initial test data is available, the Permittee shall use the hourly emissions rate from the initial test.

(2) The Permittee shall maintain records of monthly hours of operation of the aisle scrubber collection system fans.

(3) The monthly emissions calculated and recorded pursuant to Condition VI.B.3.d(1) above shall be used to demonstrate compliance with the emission limits in Condition II.B.3.a of this Attachment.

4. Performance Test Requirements

No later than 180 days from Project startup, the Permittee shall conduct or cause to be conducted, an initial performance test on the aisle scrubber stack for particulate matter emissions. Subsequent performance tests shall be conducted annually. EPA Reference Method 5 in 40 CFR 60 Appendix A and EPA Reference Method 202 specified in 40 CFR 51, Appendix M to determine the emissions of PM. All PM measured by the above reference method shall be considered to have an aerodynamic diameter less than 2.5 microns, or EPA Reference Method 201 or 201A and Method 202 specified in 40 CFR 51, Appendix M shall be used to determine emissions of PM_{10} and $PM_{2.5}$.

[A.A.C. R18-2-306.A.3.c and -312]

5. Permit Shield

Compliance with requirements of Condition VI.B above shall be deemed compliance with A.A.C. R18-2-702.B.3 and -715.A.

[A.A.C. R18-2-325]

C. Sulfur Dioxide

1. Emission Limitations/Standards

Upon Project startup and until the effective date of A.A.C. R18-2-C1302, the Permittee shall comply with the SO_2 emission limitations in Condition II.B.1.a(1) of this Attachment.

[SIP Rule R18-2-306.02.A]

2. Air Pollution Control Requirements

The Permittee shall install, maintain and *operate the aisle scrubber in accordance with good air pollution control practices for minimizing sulfur dioxide emissions*.

[A.A.C. R18-2-306.A.2, -331.A.3.d and e]
[Material permit conditions are identified by italics and underline]

3. Monitoring, Recordkeeping and Reporting Requirements

a. *The Permittee shall install, calibrate, operate,* and maintain *a continuous monitoring system (CMS) to monitor and record sulfur dioxide emissions from the aisle scrubber stack. The SO_2 CMS shall comply with the requirements for continuous monitoring systems under Condition 0 of this Attachment*.

[A.A.C. R18-2-306.A.3.c and -331.A.3.c]
[Material permit conditions are identified by italics and underline]

b. Upon Project startup and until the effective date of A.A.C. R18-2-C1302, the Permittee shall, utilizing SO_2 CMS data in Condition VI.C.3.a above, calculate and record hourly SO_2 emissions from the aisle scrubber stack for the purpose of demonstrating compliance with SO_2 emission limits in Conditions II.B.1.a(1) of this Attachment.

[A.A.C. R18-2-306.A.3.c]

D. Lead

1. Emissions Limitation and Standard

Upon Project startup, the Permittee shall comply with the lead emission limitations in Condition II.B.4.a of this Attachment.

[SIP Rule R18-306.02.A]

2. Monitoring, Recordkeeping and Reporting Requirements

No later than 180 days from Project startup, the Permittee shall determine the monthly lead emissions from the aisle scrubber stack in accordance with following:

[A.A.C. R18-2-306.A.3.c]

a. The Permittee shall calculate and record the monthly lead emissions from the aisle scrubber stack by multiplying the average hourly emission rate derived from the two most recent performance tests under Condition VI.D.3 below by aisle scrubber collection system fan hours of operation (representative of the emissions vented through the aisle scrubber stack) during the calendar month from Condition VI.D.2.b below. During the period when only the initial test data is available, the Permittee shall use the hourly emissions rate from the initial test.

b. The Permittee shall maintain records of monthly hours of operation of the aisle scrubber collection system fans.

c. The monthly emissions calculated and recorded pursuant to Condition VI.D.2.a above shall be used to demonstrate compliance with the emission limits in Condition II.B.4.a of this Attachment.

3. Performance Test Requirements

No later than 180 days from Project startup, the Permittee shall conduct or cause to be conducted, an initial performance test on the aisle scrubber stack for lead emissions. Subsequent performance tests shall be conducted annually. EPA Reference Method 29 shall be used for determining lead emissions.

[A.A.C. R18-2-312 and A.A.C. R18-2-306.A.3.c]

VII. BYPASS STACK

A. Sulfur Dioxide (SO_2)

1. Emission Limitations and Standards

Upon Project startup and until the effective date of A.A.C. R18-2-C1302, the Permittee shall not exceed the sulfur dioxide emission limit of 75 tons per year from the bypass stack from planned bypass events on 365-day rolling sum basis.

[SIP Rule R18-2-306.02.A]

2. Monitoring, Recordkeeping and Reporting Requirements

a. Upon Project startup and until the effective date of A.A.C. R18-2-

C1302,the Permittee shall, except during periods of system breakdowns, repairs, calibration checks and zero and span adjustments, calibrate, maintain, and operate a continuous monitoring system (CMS) to monitor and record sulfur dioxide emissions from the bypass stack. The SO_2 CMS shall comply with the requirements for continuous monitoring systems under Condition 0 of this Attachment.

[A.A.C. R18-2-715.K]

b. Upon Project startup and until the effective date of A.A.C. R18-2-C1302, the Permittee shall, utilizing SO_2 CMS data in Condition VIII.A.1.a above, calculate and record hourly SO_2 emissions from the bypass stack for the purpose of demonstrating compliance with sulfur dioxide emission limits in Condition II.B.1.a(1) of this Attachment.

[A.A.C. R18-2-306.A.3.c]

3. Permit Shield

Compliance with requirements of Condition VII above shall be deemed compliance with A.A.C. R18-2-715.K.

[A.A.C. R18-2-325]

VIII. SMELTER FUGITIVES

A. Particulate Matter and Opacity

1. Emission Limitations and Standards

a. Except as provided in Conditions VIII.A.1.a(1) and (2) below, the Permittee shall not cause, allow or permit to be emitted into the atmosphere, any plume or effluent from the smelter building which exceeds 20% opacity as measured by EPA Reference Method 9.

[A.A.C. R18-2-702.B.3]

(1) The Permittee shall not cause, allow or permit to be emitted into the atmosphere, any plume or effluent from the smelter building during the periods of white metal transfer between converters which exceeds 39% opacity as measured by EPA Reference Method 9.

[A.A.C. R18-2-702.E]

(2) The Permittee shall not cause, allow or permit to be emitted into the atmosphere, any plume or effluent from the smelter building during periods of matte additions to converter prior to first blow which exceeds 30% opacity as measured by EPA Reference Method 9.

[A.A.C. R18-2-702.E]

b. The opacity of any visible emissions exiting the roof monitors on the building housing the copper converter department shall not exceed 4% as determined by a performance test conducted in accordance with Condition VIII.A.5 below. This opacity limit applies only at those times when a

performance test is conducted according to Condition VIII.A.5 below. The requirements for compliance with opacity and visible emission standards specified in 40 CFR §63.6(h) do not apply to this opacity limit.
[40 CFR 63.1444(d)(4)]

2. Air Pollution Control Requirements

a. At all times when one or more batch converter is blowing, the Permittee shall operate the capture system to collect the process off gases vented from each batch copper converter according to the written operation and maintenance plan that has been prepared according to the requirements in Condition I.D.4.b of this Attachment.
[40 CFR 63.1444(d)(1)]

b. The capture system shall collect process off-gas vented during blowing through the side-flue intake on each converter vessel.
[40 CFR 63.1444(d)(3)]

c. *Upon installation of a retractable converter mouth cover on a converter, the Permittee shall, to the extent practicable,* maintain and *operate the cover in a manner consistent with good air pollution control practices to reduce fugitive process gas emissions*.
[A.A.C. R18-2-306.A.2 and A.A.C. R18-2-331.3.e]
[Material permit conditions are indicated by underline and italics]

3. Monitoring, Recordkeeping, and Reporting Requirements

a. Bi-weekly monitoring for fugitive emissions

A certified Method 9 observer shall conduct a bi-weekly (once in two weeks) visual survey of visible emissions from the smelter building when in operation as per the procedure in Condition I.E of this Attachment.
[A.A.C. R18-2-306.A.3.c]

b. Copper Converter Department Capture System Monitoring

For each operating limit established under the capture system operation and maintenance plan required by Condition I.D.4.b of this Attachment, the Permittee shall install, operate, and maintain an appropriate monitoring device according to the requirements in Conditions VIII.A.3.b(1) through (6) below to measure and record the operating limit value or setting at all times the copper converter department capture system is operating during batch copper converter blowing. Dampers that are manually set and remain in the same position at all times the capture system is operating are exempted from these requirements.
[40 CFR 63.1452(a)]

(1) Install the monitoring device, associated sensor(s), and recording equipment according to the manufacturer's specifications. Locate the sensor(s) used for monitoring in or as close to a position that provides a representative measurement of the parameter being monitored.

(2) If a flow measurement device is used to monitor the operating limit parameter, the Permittee shall meet the following:

(a) Locate the flow sensor and other necessary equipment such as straightening vanes in a position that provides a representative flow.

(b) Use a flow sensor with a minimum tolerance of 2 percent of the flow rate.

(c) Reduce swirling flow or abnormal velocity distributions due to upstream and downstream disturbances.

(d) Conduct a flow sensor calibration check at least semiannually.

(3) If a pressure measurement device is used to monitor the operating limit parameter, the Permittee shall meet the following requirements:

(a) Locate the pressure sensor(s) in or as close to a position that provides a representative measurement of the pressure.

(b) Minimize or eliminate pulsating pressure, vibration, and internal and external corrosion.

(c) Using a gauge with a minimum tolerance of 0.5 inch of water or a transducer with a minimum tolerance of 1 percent of the pressure range.

(d) Check pressure tap pluggage daily.

(e) Using a manometer, check gauge calibration quarterly and transducer calibration monthly.

(4) Conduct calibration and validation checks any time the sensor exceeds the manufacturer's specifications or if a new sensor is installed.

(5) At least monthly, inspect all components for integrity, all electrical connections for continuity, and all mechanical connections for leakage.

(6) Record the results for each inspection, calibration, and validation check.

4. 40 CFR 63, Subpart QQQ Continuous Compliance Demonstration of the Copper Converter Department Capture Systems. [40 CFR 63.1453(b)]

The Permittee shall demonstrate continuous compliance of the copper converter department capture system by meeting the following requirements:

a. Operate the copper converter department capture system at all times during blowing within the values or setting established for the operating limits and demonstrated to achieve the opacity limit;

b. Inspect and maintain the copper converter department capture system according to the applicable requirements in Condition I.D.4.b of this Attachment, and record all information needed to document conformance with these requirements;

c. Monitor the copper converter department capture system according to the requirements in Condition VIII.A.3.b above and collect, reduce, and record the monitoring data for each of the operating limit parameters; and

d. Conduct performance tests no less frequently than once per year to demonstrate that the opacity of any visible emissions exiting the roof monitors or roof exhaust fans on the building housing the copper converter department does not exceed 4 percent opacity. The performance test shall be performed as per the procedure in Condition VIII.A.5 below.

5. Performance Testing Requirements

The Permittee shall conduct each performance test to determine compliance with the opacity limit in Condition VIII.A.1.b above using the following test methods and procedures:

[40 CFR 63.1450(c)]

a. The performance test shall be conducted during the period when the primary copper smelter is operating under conditions representative of the smelter's normal blister copper production rate. A performance test may not be conducted during periods of startup, shutdown, or malfunction. Before conducting the performance test, a written test plan shall be prepared specifying the copper production conditions to be maintained throughout the opacity observation period. This plan shall include a copy of the written documentation prepared according to Condition I.D.4.b(3)(c) of this Attachment to support the established operating limits for the copper converter department capture system. A copy of the test plan shall be submitted for review and approval by the Director. During the observation period, the Permittee shall conduct appropriate process information and copper converter department capture system operating information to prepare documentation sufficient to verify that all opacity observations were made during the copper production and capture system operating conditions specified in the approved test plan.

b. The Permittee shall notify the Director before conducting the opacity observations to allow the Director the opportunity to have an authorized representative attend the test. Written notification of the location and scheduled date for conducting the opacity observation shall be received by the Director on or before 30 calendar days before the scheduled test date.

c. The Permittee shall gather the data needed for determining compliance with the opacity limit using qualified visible emission observers and process monitors as follows:

(1) Opacity observations shall be performed by a sufficient number of qualified visible emission observers to obtain two complete concurrent sets of opacity readings for the required observation period. Each visible emission observer shall be certified as a qualified observer by the procedure specified in Section 3 of Method 9 in Appendix "A" of 40 CFR 60. The entire set of readings during the required observation period does not need to be made by the same two observers. More than two observers may be used to allow for substitutions and provide for observer rest breaks. The Permittee shall obtain proof of current visible emission reading certification for each observer.

(2) A person (or persons) familiar with the copper production operations conducted at the smelter shall serve as the indoor process monitor. The indoor process monitor is stationed at a location inside the building housing the batch copper converters such that he or she can visually observe and record operations that occur in the batch copper converter aisle during the times that the visible emission observers are making opacity readings. More than one indoor process monitor may be used to allow for substitutions and provide for rest breaks.

d. The Permittee shall make all opacity observations using EPA Reference Method 9 and follow the procedures detailed below:

(1) Each visible emission observer shall make his or her readings at a position from the outside of the building that houses the copper converter department such that the observer's line-of-sight is approximately perpendicular to the longer axis of the converter building, and the observer has an unobstructed view of the building roof monitor sections or roof exhaust fan outlets that are positioned over each of the batch copper converters inside the building. Opacity readings can only be made during those times when the observer's position meets the sun orientation and other conditions specified in section 2.1 or Method 9.

(2) At 15-second intervals, each visible emission observer views the building roof monitor sections or roof exhaust fan outlets that are positioned over each of the batch copper converters inside the building and reads the opacity of the visible plumes. If no plume is visible, the observer records zero as the opacity value for the 15-second interval. In situations when it is possible for an observer to distinguish two or more visible emission plumes from the building roof monitor sections or roof exhaust fan outlets, the observer shall identify, to the extent feasible, the plume having the highest opacity and record his or her opacity reading for the plume as the opacity value for the 15-second interval.

e. The Permittee shall make opacity observations for a period of sufficient duration to obtain a minimum of 120 1-minute intervals during which at least one copper converter is blowing and no interferences have occurred

from other copper production events, as specified in Condition VIII.A.5.g below, which generate visible emissions inside the building that potentially can interfere with the visible emissions from the converter capture systems as seen by the outside observers. To obtain the required number of 1-minute intervals, the observation period may be divided into two or more segments performed on the same day or on different days if conditions prevent the required number of opacity readings from being obtained during one continuous time period. Examples of these conditions include, but are not limited to, changes in the sun's orientation relative to visible emission observers' positions such that the Method 9 conditions are no longer met or weather conditions that interfere with the observers' ability to record acceptable opacity readings. If the total observation period is divided into two or more segments, all opacity observations shall be made during the same set of copper production conditions described in your approved test plan as required by Condition VIII.A.5.a above.

f. The Permittee shall gather indoor process information during all times that the visible emission observers are making opacity readings outside the building housing the copper converter department. The indoor process monitor shall continually observe the operations occurring in the copper converter department and prepare a written record of his or her observations using the procedure specified below:

(1) At the beginning of each observation period or segment, the clock time setting on the watch or clock to be used by the indoor process monitor shall be synchronized with the clock time settings for the timepieces to be used by the outdoor opacity observers.

(2) During each period or segment when opacity readings are being made by the visible emission observers, the indoor process monitor shall continuously observe the operations occurring in the copper converter department and record his or her observations in a log book, on data sheets, or other type or permanent written format.

(3) When a batch copper converter is blowing, a record shall be prepared for the converter that includes, but is not limited to, the clock times for when blowing begins and when blowing ends and the converter blowing rate. This information may be recorded by the indoor process monitor or by a separate, automated computer data system.

(4) The process monitor shall record each event other than converter blowing that occurs in or nearby the converter aisle that he or she observes to generate visible emissions inside the building. The recorded entry for each event shall include, but is not limited to, a description of the event and the clock times when the event begins and when the event ends.

g. The Permittee shall prepare a summary of the data for the entire observation period using the information recorded during the observation

period by the outdoor visible emission observers and the indoor process monitor and the procedure specified below:

(1) Using the field data sheets, identify the 1-minute clock times for which a total of eight opacity readings were made and recorded by both observers at 15-second intervals according to the test procedures (i.e., a total of four opacity values have been recorded for the 1-minute interval by each of the two observers). Calculate the average of the eight 15-second interval readings recorded on the field data sheets by the two observers during the clock time minute interval (add the four consecutive 15-second interval opacity readings made by observer A during the specified clock time minute, plus the four consecutive 15-second interval opacity readings made by observer B during the same clock time minute, and divide the resulting total by eight). Record the clock time and the opacity average for the 1-minute interval on a data summary sheet.

(2) Using the data summary sheets prepared according to Condition VIII.A.5.g(1) above and the process information recorded according to Condition VIII.A.5.f(3) above, identify those 1-minute intervals for which at least one of the batch copper converters was blowing.

(3) Using the data summary sheet prepared according to Condition VIII.A.5.g(2) above and the process information recorded according to Condition VIII.A.5.f(4) above, identify the 1-minute intervals during which at least one copper converter was blowing but none of the interference events listed in Condition VIII.A.5.g(3)(a) through (f) below occurred. Other ancillary activities not listed but conducted in or adjacent to the converter aisle during the opacity observations are not considered to be interference events (e.g., converter aisle cleaning, placement of smoking ladles or skulls on the converter aisle floor).

(a) Charging of copper matte, reverts, or other materials to a batch copper converter;

(b) Skimming slag or other molten materials from a batch copper converter;

(c) Pouring of blister copper or other molten materials from a batch copper converter;

(d) Return of slag or other molten materials to the smelting furnace or slag cleaning vessels;

(e) Roll-out or roll-in of the batch copper converter; or

(f) Smoke and fumes generated inside the converter building by operation of the smelting furnace, the slag cleaning

vessel (if used), anode refining and casting processes that drift into the copper converter department.

(4) Using the data summary sheets prepared according to Condition VIII.A.5.g(3) above up to five 1-minute intervals following an interference event may be eliminated from data used for the compliance determination calculation specified in Condition VIII.A.5.h below by applying a time delay factor. The delay factor shall be a constant number of minutes not to exceed 5 minutes that is added to the clock time recorded when cessation of the interference event occurs. The same time delay factor shall be used for all interference events (i.e., a constant time delay factor for the smelter of 1 minute, 2 minutes, 3 minutes, 4 minutes, or 5 minutes). The number of minutes to be used for the time delay factor is determined based on the site-specific equipment and converter building configuration. An explanation of the rationale for selecting the value used for the time delay factor shall be prepared and included in the test report.

h. The Permittee shall use the date summary prepared in Condition VIII.A.5.g above to calculate the average opacity value for a minimum of 120 1-minute intervals during which at least one copper converter was blowing with no interference events as determined according to Conditions VIII.A.5.g(3)(a) and (4) above. Average opacity is calculated using the equation below:

$$VE_{ave} = 1/n \sum_{i=1}^{n} VE_i$$

Where

VE_{ave} = Average opacity to be used for compliance determination (percent);

n = Total number of 1-minute intervals during which at least one copper converter was blowing with no interference events as determined according to Conditions VIII.A.5.g(3) and (4) above (at least 120 1-minute intervals);

i = 1-minute interval "i" during which at least one copper converter was blowing with no interference events as determined according to Conditions VIII.A.5.g(3) and (4) above; and

VE_i = Average opacity value calculated for the eight opacity readings recorded during 1-minute interval "i" (percent).

i. The Permittee shall certify that the copper converter department capture system operated during the performance test at the operating limits established in the capture system operation and maintenance plan using the procedure specified below:

(1) Concurrent with all opacity observations, measure and record

values for each of the operating limit parameters in the capture system operation and maintenance plan according to the monitoring requirements specified in Condition VIII.A.3.b above.

(2) For any dampers that are manually set and remain in the same position at all times the capture system is operating, the damper position shall be visually checked and recorded at the beginning and end of each opacity observation period segment.

(3) Review the recorded monitoring data. Identify and explain any times during batch copper converter blowing when the capture system operated outside the applicable operating limits.

(4) Certify in the performance test report that during all observation period segments, the copper converter department capture system was operating at the values or settings established in the capture system operation and maintenance plan.

6. Smelter Roofline Fugitives Particulate Matter and Lead Emissions Monitoring

a. Roofline Emission Monitoring Protocol

(1) No less than 180 days prior to Project startup, the Permittee shall submit to the Director a protocol for monitoring particulate matter and lead emissions from the smelter roofline fugitives. The protocol shall contain the following methodologies:

(a) Methods for the collection of samples from the roofline vents

(b) Methods for the measurement of air flow through the vents

(c) Methods for the measurement of lead and particulate matter concentrations

(d) Methods for performance testing

(2) Upon Project startup, the Permittee shall monitor emissions of particulate matter from the smelter roofline fugitives in accordance with the approved protocol in Condition VIII.A.6.a(1) above.

[A.A.C. R18-2-306.A.3.c]

b. Roofline Particulate Emission Monitoring

No later than 180 days from Project startup, the Permittee shall determine the monthly particulate matter emissions from the smelter roofline fugitives in accordance with following:

[A.A.C. R18-2-306.A.3.c]

(1) The Permittee shall calculate and record monthly particulate

matter (PM, PM_{10} and $PM_{2.5}$) emissions from the roofline by multiplying the average hourly emission rate derived from the two most recent performance tests under Condition VIII.A.6.c below by the number of hours of operation of the emission units associated with the roofline during the calendar month from Condition VIII.A.6.b(2) below. During the period when only the initial test data is available, the Permittee shall use the hourly emissions rate from the initial test.

(2) The Permittee shall maintain records of monthly hours of operation when any of the emission units associated with the roofline are operational. .

(3) The monthly emissions calculated and recorded pursuant to Condition VIII.A.6.b(1) above shall be used to demonstrate compliance with the emission limits in II.B.3.a of this Attachment.

c. Performance Test Requirements

No later than 180 days from Project startup, the Permittee shall perform an initial performance test for particulate matter emissions from the roof line monitors. Subsequent performance tests shall be conducted annually. Permittee shall use a modified EPA Reference Method 14 for sample collection from the roofline monitors. EPA Reference Method 5 in 40 CFR 60, Appendix A and EPA Reference Method 202 specified in 40 CFR 51, Appendix M shall be used to determine emissions of PM. All particulate matter measured by the above reference method can be considered to have an aerodynamic diameter less than 2.5 microns or EPA Reference Method 201 or 201A and Method 202 specified in 40 CFR 51, Appendix M can be used to determine emissions of $PM_{2.5}$ and PM_{10}.

[A.A.C. R18-2-306.A.3.c and -312]

7. Permit Shield

[A.A.C. R18-2-325]

Compliance with requirements of Condition VIII.A above shall be deemed compliance with A.A.C. R18-2-702.B.3 and E; 40 CFR 63.1444(d)(1), (3) and (4), 1450(c), and 1453(b).

B. Sulfur Dioxide

1. Emission Limitations/Standards

Until Project startup, the Permittee shall not exceed the overall emission limit for sulfur dioxide specified in Attachment ”C” of this Permit.

[Condition II.E of Att. B of Installation Permit #1232]

2. Monitoring, Recordkeeping, and Reporting Requirements

a. *Upon Project startup, the Permittee shall install, calibrate, operate* and maintain *a roofline monitoring system (RMS) to monitor and record the SO_2 fugitive emissions from the roof line.*

[A.A.C. R18-2-306.A.3.c and -331.A.3.c]
[Material permit conditions are identified by italics and underline]

b. Not less than 180 days prior to Project startup, the Permittee shall submit to the Director a protocol for operation of RMS. The Protocol shall include following elements:

[A.A.C. R18-2-306.A.3.c]

(1) The RMS shall include measurement of fugitive emissions from, at a minimum, the following systems that is representative of total fugitive SO_2 emissions:

(a) Converter system (directly venting to the atmosphere)

(b) Electric Furnace system

(c) Anode Plant system

(d) IsaSmelt® system

(2) Each measurement system shall include at least one SO_2 analyzer and sufficient sampling locations that ensure collection of a representative sample along the roof monitor for each monitor system. The number of sample probes and their locations for each monitoring system shall account for the physical configuration of the vent, the locations of emitting activities relative to the vent, and heat generated by the equipment served by the vent.

(3) Each measurement system shall include validation of adequate velocity for flow measurements and sufficient flow and temperature sensors to ensure calculation of representative exhaust flows through each vent. The number of such sensors and their locations for each monitoring system shall account for the physical configuration of the vent, the locations of emitting activities relative to the vent, and heat generated by the equipment served by the vent.

(4) Each measurement system shall include an on-site data collection system that continuously logs and stores the measured SO_2 concentration, the measured flow velocity, and the measured temperature.

(5) An appropriate range for zero-span drift shall be established for all SO_2 analyzers to ensure proper calibration and operation. Unless otherwise provided in the roofline fugitive emissions monitoring plan required by Condition VIII.B.2.a above, the zero (or low-level) value determination shall be made using a gas containing between zero to 20 percent of the span value for SO_2 and the span (or high-level) value determination shall be made using a certified gas with a value between 50 and 100 percent of the span value for SO_2. For each SO_2 analyzer, a daily zero-span check shall be performed by introducing zero gas and a known

concentration of span gas to the analyzer. If the zero or span drift for any analyzer is greater than 5% of the span gas concentration for five consecutive days or greater than 10% of the span gas concentration for one day, the analyzer shall be found to be operating improperly and appropriate measures shall be taken to return the analyzer to proper operation. The zero-span check shall be repeated after any such corrective action is taken.

(6) All SO_2 analyzers shall be internally inspected quarterly by the Permittee and inspected annually by an independent auditor. The inspections shall be conducted in accordance with the requirements of 40 CFR 60, Appendix F, Procedure 1, Section 5 or as otherwise provided in the roofline fugitive emissions plan required by Condition VIII.B.2.a above. The quarterly inspections shall consist of two certified concentrations of SO_2 to each sample probe system and comparing the known concentrations to the concentrations logged by the corresponding on-site data collection system to generate a relative error for each system.

(7) When no valid hour or hours of data have been recorded by the RMS and the associated process unit is operating, the Permittee shall calculate substitute data for each such period according to the following procedures:

(a) For a missing data period less than or equal to 24 hours, substitute the average of the hourly SO_2 concentrations recorded by the analyzer for the hour before and the hour after the missing data period.

(b) For a missing data period greater than 24 hours, substitute the greater of:

(i) The 90^{th} percentile hourly SO_2 concentrations recorded by the analyzer during the previous 720 quality-assured monitor operating hours; or

(ii) The average of the hourly SO_2 concentrations recorded by the analyzer for the hour before and the hour after the missing data period.

(8) The flow and temperature data shall be checked daily for proper operation of flow and temperature sensors. If a flow or temperature sensor is found to be operating improperly, appropriate measures shall be taken to return the sensor to proper operation.

(9) All temperature sensors shall be inspected annually. The inspection shall be conducted according to the manufacturer's specification. A temperature sensor tolerance range representative of proper sensor operation shall be established. If a temperature

sensor is found to measure outside of an established range, the sensor shall be found to be operating improperly and appropriate measures shall be taken to return the sensor to proper operation.

(10) All flow sensors shall be calibrated semi-annually with calibration tools according to the manufacturer's specifications. If a flow sensor is found to measure outside of an established range, the sensor shall be found to be operating improperly and appropriate measures shall be taken to return the sensor to proper operation.

c. Utilizing SO_2 RMS data, the Permittee shall calculate and record hourly SO_2 fugitive emissions from the roof line for the purpose of demonstrating compliance with sulfur dioxide emission limits in Conditions II.B.1.a of this Attachment.

3. Permit Shield

Compliance with requirements of Condition VIII.B above shall be deemed compliance with Condition II.E of Att. B of Installation Permit #1232.

[A.A.C. R18-2-325

C. Lead

1. Emission Limitations/Standards

The quantity of lead in the total feed to all smelting furnaces shall not exceed 3102 tons in any rolling twelve month period.

[A.A.C. R18-2-306.A.2]

2. Monitoring, Recordkeeping, and Reporting Requirements

a. Compliance with the feed limitations of lead in Condition VIII.C.1 above shall be determined by using the results of monthly tests of composite feed samples to calculate, on a monthly basis, the quantity of lead in the total feed to the furnaces. A 12-month rolling total shall be calculated at the end of each month.

[A.A.C. R18-2-306.A.3.c]

b. Upon Project startup, the Permittee shall monitor emissions of lead from the smelter roofline fugitives in accordance with the approved protocol in Condition VIII.A.6.a(1) above.

[A.A.C. R18-2-306.A.3.c]

c. Roofline Lead Monitoring

No later than 180 days from Project startup, the Permittee shall determine the monthly lead from roofline in accordance with following:

[A.A.C. R18-2-306.A.3.c]

(1) The Permittee shall calculate and record monthly lead emissions from the roofline by multiplying the average hourly emission rate derived from the two most recent performance tests under

Condition VIII.C.2.d below by the number of hours of operation of the emission units associated with the roofline during the calendar month from Condition VIII.C.2.c(2) below. During the period when only the initial test data is available, the Permittee shall use the hourly emissions rate from the initial test.

(2) The Permittee shall maintain records of monthly hours of operation when any of the emission units associated with the roofline are operational.

(3) The monthly lead emissions from Condition VIII.C.2.c(1) above shall be used to demonstrate compliance with the emission limits in Condition II.B.4.a above.

d. Performance Test Requirements

No later than 180 days from Project startup, the Permittee shall perform an initial performance test for lead emissions from the roof line monitors. Subsequent performance tests shall be conducted annually. Permittee shall use EPA Reference Method 14 for sample collection from the roofline monitors. EPA Reference Method 29 shall be used to determine emissions of lead.

[A.A.C. R18-2-312 and A.A.C. R18-2-306.A.3.c]

3. Permit Shield

Compliance with requirements of Condition VIII.C above shall be deemed compliance with Condition II.F.2 of Att. B of Installation Permit #1232.

[A.A.C. R18-2-325]

IX. FACILITYWIDE REQUIREMENTS (MULTI POINT ROLLBACK RULE)

A. General Provisions

1. Applicability

a. The requirements of this Condition apply are applicable until the effective date of A.A.C. R18-2-C1302.

b. The requirements of this Condition are applicable to the total of SO_2 emissions from smelter processing units and SO_2 control and removal equipment, but not to uncaptured fugitive emissions or emission due solely to the use of fuel for space heating or steam generation.

[A.A.C. R18-2-715.01.A]

2. Definitions

a. An "operating day" for the purpose of this Condition, means any day in which sulfur containing feed is introduced into the smelting process.

[A.A.C. R18-2-715.01.J]

b. "Compliance period" for the purposes of this Condition, means the 365

calendar days immediately preceding the end of each day of the month being reported unless that period includes less than 300 operating days. In such case the number of days preceding the last day of the compliance period shall be increased until the compliance period contains 300 operating days.

[A.A.C. R18-2-715.01.J]

B. Emission Limitations and Standards

1. Annual average SO_2 emissions from the stacks as calculated under Condition IX.C.4.a below shall not exceed 604 pounds per hour.

[A.A.C. R18-2-715.F.2.a]

2. The number of three-hour average emissions as calculated under Condition IX.C.4.b below shall not exceed n cumulative occurrences in excess of E, the emission level, shown below in any compliance period:

[A.A.C. R18-2-715.F.2.b]

ALLOWABLE SO_2 EMISSIONS PROFILE

Occurrences, n	Emission Level, E (lbs/hr)	Occurrences, n	Emission Level, E (lbs/hr)
0	8678	180	1145
1	7158	245	1064
2	5903	330	1015
4	4575	435	968
7	4074	560	933
12	3479	710	896
20	3017	890	862
32	2573	1100	828
48	2111	1340	797
68	1703	1610	765
94	1461	1910	739
130	1274	2240	712

3. In addition to the limits in Conditions IX.B.1 and 2 above, the Permittee shall not discharge or cause the discharge of sulfur dioxide into the atmosphere from combined stack and fugitive emissions units in excess of the 2,420 pounds per hour annual average calculated under R18-2-715.01(U).

[A.A.C. R18-2-715.H]

C. Monitoring, Recordkeeping and Reporting Requirements

1. Sulfur Balance

As a means of determining total overall emissions, the Permittee shall perform monthly material balances for sulfur in accordance with the procedures prescribed

in the Attachment "D" of this permit.

[A.A.C. R18-2-715.01.O]

2. For purposes of determining compliance with the cumulative occurrence and emission limits contained in Conditions IX.B.1 and 2 above, the Permittee shall continue to calibrate, maintain, and operate a measurement system for continuously monitoring sulfur dioxide concentrations and stack gas volumetric flow rates of the following:

[A.A.C. R18-2-715.01.K, K.1 and K.2]

a. Acid Plant Tail Gas Stack

b. Vent Fume Stack

c. Aisle Scrubber Stack

3. All the SO_2 CMS and stack gas volumetric flow rate measurement systems shall comply with the requirements for continuous monitoring systems in Condition 0 of this Attachment.

[A.A.C. R18-2-306.A.3.c]

4. For purposes of determining compliance with the cumulative occurrence and emission limits contained in Conditions IX.B.1 and 2 above, the annual average emissions and three-hour emissions shall be determined as follows:

a. The Permittee shall, at the end of each day, calculate annual average SO_2 emissions by averaging the SO_2 emissions for all hours measured during the compliance period ending on that day.

[A.A.C. R18-2-715.01.C.1]

b. The Permittee shall, at the end of each clock hour, calculate three-hour SO_2 emissions averages by averaging the hourly SO_2 emissions for the preceding three consecutive hours provided each such hour was measured in accordance with the requirements of Condition IX.C.2 above.

[A.A.C. R18-2-715.01.C.2]

c. The actual cumulative occurrence and emission level shall be determined using the sum total of sulfur dioxide emissions from the smelter processing units and sulfur dioxide control and removal equipment. The captured fugitive emissions shall be included as part of the total plant emissions, but not the uncaptured fugitive emissions and those emissions due solely to the use of fuel for space heating or steam generation.

[A.A.C. R18-2-715.01.A and 715.01.K.2]

5. The Permittee shall determine compliance with the emission limit contained in Condition IX.B.3 above as follows:

a. The Permittee shall calculate annual average stack emissions at the end of the last day of each month by averaging the emissions for all hours measured during the previous 12-month period ending on that day according to the requirements contained in this Condition.

[A.A.C. R18-2-715.01.U.1]

b. The Permittee shall calculate annual average fugitive emissions at the end of the last day of each month by averaging the monthly emissions for the previous 12-month period ending on that day. To determine monthly fugitive emissions, the Permittee shall perform material balances for sulfur according to the sulfur balance procedures prescribed Attachment "D" of this permit.

[A.A.C. R18-2-715.01.U.2]

6. Periods of malfunction, startup, shutdown or other upset conditions shall be included in the determining compliance with the cumulative occurrence or annual average emission limits under Conditions IX.B.1, 2 and 3 above.

[A.A.C. R18-2-715.01.B]

7. Violation Determination

For purposes of this Condition, the following scenarios shall be considered violations of the cumulative occurrence and/or emission limits contained in Conditions IX.B.1, 2 and 3 above:

a. An annual emissions average in excess of the allowable annual average emission limit in Condition IX.B.1 above shall be considered a violation if either:

(1) The annual average is larger than the annual average computed for the preceding day; or

[A.A.C. R18-2-715.01.C.1.a]

(2) The annual averages computed for the five preceding days all exceed the allowable annual average emission limit.

[A.A.C. R18-2-715.01.C.1.b]

b. A three-hour emissions average in excess of an emission level (E) will be considered to violate the associated cumulative occurrence limit (n) listed in Condition IX.B.2 above if both:

(1) The number of all three-hour emissions averages measured during the compliance period in excess of that emission level exceeds the cumulative occurrence limit associated with the emission level; and

[A.A.C. R18-2-715.01.E.1]

(2) The average was measured during the last operating day of the compliance period being reported.

[A.A.C. R18-2-715.01.E.2]

c. A three-hour emissions average can only violate the cumulative occurrence limit (n) of an emission level (E) in the day containing the last hour in the average.

[A.A.C. R18-2-715.01.F]

d. Multiple violations of a cumulative occurrence limit in the same day and violations of different cumulative limits in the same day shall constitute a single violation.

[A.A.C. R18-2-715.01.G]

e. The violation of any cumulative occurrence limit and an annual average emission limit in the same day shall constitute only a single violation.

[A.A.C. R18-2-715.01.H]

f. Multiple violations of a cumulative occurrence limit by different three-hour emissions averages containing any common hour shall constitute a single violation.

[A.A.C. R18-2-715.01.I]

g. An annual emissions average in excess of the allowable annual average emission limit in Condition IX.B.3 above shall be considered a violation if the total of the stack and fugitive annual averages computed at the end of each month exceeds the allowable annual average emission limit.

[A.A.C. R18-2-715.01.U.3]

8. Recordkeeping and Reporting Requirements

a. The Permittee shall maintain a record of all average hourly emissions measurements and calculated average monthly emissions required by this Condition.

[A.A.C. R18-2-715.01.P]

b. All of the following measurement results and calculated average monthly emissions shall be expressed as pounds per hour of sulfur dioxide and shall be summarized monthly and submitted to the Director within 20 days after the end of each month:

[A.A.C. R18-2-715.01.P]

(1) For all periods described in Condition IX.C.4 above, the annual average emissions as calculated at the end of each day of the month;

(2) The total number of hourly periods during the month in which measurements were not taken and the reason for loss of measurement for each period;

(3) The number of three-hour emissions averages which exceeded each of the applicable emissions levels listed in Condition IX.B.2 above for the compliance periods ending on each day of the month being reported;

(4) The date on which a cumulative occurrence limit listed in Condition IX.B.2 above was exceeded if such exceedance occurred during the month being reported.

(5) For all periods described in Condition IX.C.5 above, the annual average emissions as calculated at the end of the last day of each month.

c. Along with the monthly reports above, the Permittee shall submit the following reports:

[A.A.C. R18-2-306.A.5.a]

(1) Reports of sulfur dioxide emissions (stack and total) in tons per year for the preceding twelve months to demonstrate compliance with the limits specified in Attachment "C";

(2) Reports to demonstrate compliance with Condition I.C of Attachment "D";

(3) Reports of monthly sulfur balance broken down into the major process streams that constitute the sulfur balance;

(4) No later than 180 days from the Project startup, the Permittee shall submit aggregate reports of sulfur dioxide emissions (stack and total) in tons per year to demonstrate compliance with the limits specified in Conditions II.B.1.a of this Attachment and VIII.A.1 of this Attachment. During the initial twelve month period, the Permittee shall report running monthly total emissions after Project startup. Following the initial twelve month period, the Permittee shall report rolling 12-month total of sulfur dioxide emissions.

d. Bypass Reporting Requirements

At each point in the permitted smelter facility where a means exists to bypass the sulfur removal equipment, such bypass shall be instrumented and monitored to detect and record all periods that the bypass is in operation. The Permittee shall report to the Director, not later than the 15th day of each month, the information required to be recorded by this Condition. Such report shall include an explanation for the necessity of the use of the bypass.

[A.A.C. R18-2-715.01.Q]

D. Permit Shield

Compliance with requirements of Condition IX above shall be deemed compliance with A.A.C. R18-2-715.F.2, H, -715.01.A, B, C, E, F, G, H, I, J, K.1, K.2, O, P, Q, and U.

[A.A.C. R18-2-325]

X. GENERAL PROVISIONS FOR CONTINUOUS MONITORING SYSTEMS

A. Applicability

The requirements of Conditions X.B through F below apply until the effective date of A.A.C. R18-2-C1302. The requirements of Condition X.H through J apply upon the effective date of A.A.C. R18-2-C1302.

B. General Requirements

1. The SO_2 CMS and NO_X CMS shall meet 40 CFR Part 60, Appendix B, "Performance Specification 6 - Specifications and Test Procedures for Continuous Emission Rate Monitoring Systems in Stationary Sources." The CMS shall follow a quality assurance procedure equivalent to 40 CFR 60 Appendix F.
[40 CFR 60.13(a) and A.A.C. R18-2-715.01.K.5.a]

2. All the stack gas volumetric flow rate monitoring systems shall meet 40 CFR Part 60, Appendix B, "Performance Specification 6- Specifications and Test Procedures for Continuous Emission Rate Monitoring Systems in Stationary Sources".
[A.A.C. R18-2-715.01.K.5.a and b]

3. For the purpose of the SO_2 CMS performance evaluation, the reference method for Relative Accuracy Test procedure under 40 CFR Part 60, Appendix B, Performance Specification 2 (as incorporated by reference in 40 CFR Part 60, Appendix B, Performance Specification 6) shall be Method 6. The pollutant gas for preparing calibration gas mixture and calibration checks shall be sulfur dioxide.
[40 CFR 60.13(c) and 40 CFR 60.165(b)(2)(ii)]

4. For the purpose of the NO_X CMS performance evaluation, the reference method for Relative Accuracy Test procedure under 40 CFR Part 60, Appendix B, Performance Specification 2 (as incorporated by reference by 40 CFR Part 60, Appendix B, Performance Specification 6), shall be Method 7E (or any alternative approved by EPA) and the pollutant gas for preparing calibration gas mixture and calibration checks shall be a mixture of nitrogen oxide and nitrogen dioxide.
[40 CFR 60.13(c) and A.A.C. R18-2-306.A.3.d]

5. The Permittee shall notify the Director in writing at least 30 days in advance of the start of relative accuracy test audit (RATA) procedures performed on the continuous monitoring systems.
[A.A.C. R18-2-306.A.3.d and -715.01.K.5.c]

6. Location change of all sampling points for monitoring SO_2 and NO_X concentrations and stack gas volumetric flow rates shall be approved in writing by the Director.
[A.A.C. R18-2-306.A.3.d and -715.01.K.5.d]

7. The measurement system installed and used is subject to the manufacturers recommended zero adjustment and calibration procedures at least once per 24-hour operating period unless the manufacturer specifies or recommends calibration at shorter intervals, in which case specifications or recommendations shall be followed. The Permittee shall make available a record of these procedures that clearly shows instrument readings before and after zero adjustment and calibration.
[A.A.C. R18-2-306.A.3.d and -715.01.K.5.e]

8. The Permittee shall measure at least 95 percent of the hours during which SO_2 and NO_X emissions occurred in any month, using the continuous monitoring systems.
[A.A.C. R18-2-306.A.3.d and -715.01.L]

9. Failure to measure any 12 consecutive hours of emissions of SO_2 and NO_X in accordance with the requirements in this Condition shall constitute a violation.

[A.A.C. R18-2-306.A.3.c and -715.01.M]

10. The Permittee shall maintain on hand and ready for immediate installation sufficient spare parts or duplicate systems for the SO_2 continuous monitoring equipment required by Condition X.C.2 of this Attachment to allow for the replacement within six hours of any monitoring equipment part which fails or malfunctions during operation.

[A.A.C. R18-2-715.01.N]

11. The Permittee shall maintain on hand and ready for immediate installation sufficient spare parts or duplicate systems for the NO_X continuous monitoring equipment required by this Condition IV.D.2.b(1) of this Attachment to allow for the replacement within twenty-four hours of any monitoring equipment part which fails or malfunctions during operation If the Permittee, due to extenuating circumstances, is not able to locate the spare parts or duplicate systems for a monitoring equipment part which fails or malfunctions during operation within a twenty-four hour timeframe, the Permittee shall replace the monitoring equipment no later than 72 hours. If the Permittee is not able to replace the part or system within 72 hours, the Permittee shall request for an extension along with the justification for the same.

[A.A.C. R18-2-306A.2]

C. Calibration drift checks

1. The Permittee shall check the zero (or low-level value between 0 and 20% of span value) and span (50 to 100 percent of span value) calibration drifts (CD) at least once daily in accordance with a written procedure prescribed by the manufacturer.

[40 CFR 60.13(d)(1) and A.A.C. R18-2-306A.3.d]

2. Zero and span drift adjustments

[40 CFR 60.13(d)(1) and A.A.C. R18-2-306A.3.d]

a. The zero and span shall, as a minimum, be adjusted whenever the 24-hr zero drift or 24-hr span drift exceeds + 5% of the span value.

b. The CMS shall allow for the amount of excess zero and span drift measured at the 24-hour interval checks to be recorded and quantified.

D. Minimum frequency of operation

1. Except during periods of system breakdowns, repairs, calibration checks, and zero and span adjustments, the SO_2 and NO_X CMS shall be in continuous operation.

[40 CFR 60.13(e)(2) and A.A.C. R18-2-306A.3.d]

2. For purposes of SO_2 and NO_X CMS, continuous monitoring means the taking and recording of at least one measurement of sulfur dioxide concentration and stack gas flow rate reading from the effluent of each affected stack, outlet or other approved measurement location in each 15-minute period. Fifteen-minute periods start at the beginning of each clock hour, and run consecutively. An hour of smelter emissions is continuously monitored if the emissions from all monitored stacks, outlets, or other approved measurement locations are measured for at least 45 minutes of any hour.

[A.A.C. R18-2--306.A.3.d and -715.01.K.4]

3. If the Permittee can demonstrate to the Director that measurement of stack gas volumetric flow in the outlet of any particular piece of SO_2 or NO_X control equipment would yield inaccurate results or would be technologically infeasible, then the Director may allow measurement of the flow rate at an alternative sampling point.

[A.A.C. R18-2--306.A.3.d and -715.01.K.3]

E. Data reduction procedures

[40 CFR 60.13(h) and A.A.C. R18-2-306A.3.d]

1. The Permittee shall reduce all data from the CMS to 1-hour averages. The 1-hour averages shall be computed from four or more data points equally spaced over each 1-hour period.

2. Data recorded during periods of system breakdowns, repairs, calibration checks, and zero and span adjustments shall not be included in the data averages computed under the previous paragraph. An arithmetic or integrated average of all data may be used. The data may be recorded in reduced or non-reduced form.

3. During the periods of system breakdowns, repairs, calibration checks and zero and span adjustments, the Permittee shall calculate substitute data for that period according to the following procedures:

   a. For a missing data period less than or equal to 24 hours, substitute the average of the hourly SO_2 or NO_X concentrations recorded by the CMS for the hour before and the hour after the missing data period.

   b. For a missing data period greater than 24 hours, substitute the greater of:

      (1) The 90^{th} percentile hourly SO_2 or NO_X concentrations recorded by the CMS during the previous 720 quality-assured monitor operating hours; or

      (2) The average of the hourly SO_2 or NO_X concentrations recorded by the CMS for the hour before and the hour after the missing data period

F. Recordkeeping and Reporting Requirements

1. The Permittee shall maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of an affected facility under this Condition; any malfunction of the air pollution control equipment; or any periods during which a continuous monitoring system or monitoring device is in operative.

[40 CFR 60.7(b) and A.A.C. R18-2-306.A.3.c]

2. The Permittee shall maintain a file of all measurements, including continuous monitoring system, monitoring device, and performance testing measurements; all continuous monitoring system performance evaluations; all continuous monitoring system or monitoring device calibration checks; adjustments and maintenance performed on these systems or devices; and all other information required by this Condition recorded in a permanent form suitable for inspection. The file shall be retained for at least five years following the date of such measurements,

maintenance, reports and records.

[40 CFR 60.7(f) and A.A.C. R18-2-306.A.4.b]

3. Semiannual SO_2 excess emissions and monitoring systems performance reports

a. The Permittee shall submit an Excess Emissions and Monitoring Systems Performance (EEMSP) report and/or a summary report form to the Department for semiannually, unless the total duration of excess emissions for the reporting period is less than 1 percent of the total operating time for the reporting period and the continuous monitoring system downtime for the reporting period is less than 5 percent of the total operating time for the reporting period, in which case only the summary report form shall be submitted and the excess emissions report need not be submitted unless requested by the Department. All semiannual reports shall be postmarked by the 30th day following the end of each six-month period.

[40 CFR 60.7(c) and (d)]

a. The summary report form submission required in Condition X.E.3.a above shall be in the format specified in 40 CFR 60.7(d). Each EEMSP report shall include the following information:

[40 CFR 60.7(d)]

(1) The magnitude of excess emissions computed, any conversion factor(s) used, and the date and time of commencement and completion of each time period of excess emissions. The process operating time during the reporting period.

(2) Specific identification of each period of excess emissions that occurs during startups, shutdowns, and malfunctions of the affected facility. The nature and cause of any malfunction (if known), the corrective action taken or preventative measures adopted.

(3) The date and time identifying each period during which the continuous monitoring system was inoperative except for zero and span checks and the nature of the system repairs or adjustments.

(4) When no excess emissions have occurred or the continuous monitoring system(s) have not been inoperative, repaired, or adjusted, such information shall be stated in the report.

4. Semiannual NO_x Emissions and Monitoring Systems Performance Reports

[A.A.C. R18-2-306.A.3.c]

a. The Permittee shall submit an Excess Emissions and Monitoring Systems Performance (EEMSP) report and/or a summary report form to the Department semiannually, unless the total duration of excess emissions for the reporting period is less than 1 percent of the total operating time for the reporting period and the continuous monitoring system downtime for the reporting period is less than 5 percent of the total operating time for the reporting period, in which case only the summary report form shall be submitted and the excess emissions report need not be submitted unless

requested by the Department. All semiannual reports shall be postmarked by the 30th day following the end of each six-month period.

b. The summary report form submission required in the Condition X.F.4.a above shall be in the format similar to the one specified in 40 CFR 60.7(d). Each EEMSP report shall include the following information:

(1) The magnitude of excess emissions computed, any conversion factor(s) used, and the date and time of commencement and completion of each time period of excess emissions. The process operating time during the reporting period.

(2) Specific identification of each period of excess emissions that occurs during startups, shutdowns, and malfunctions of the affected facility. The nature and cause of any malfunction (if known), the corrective action taken or preventative measures adopted.

(3) The date and time identifying each period during which the continuous monitoring system was inoperative except for zero and span checks and the nature of the system repairs or adjustments.

(4) When no excess emissions have occurred or the continuous monitoring system(s) have not been inoperative, repaired, or adjusted, such information shall be stated in the report.

G. Permit Shield

Compliance with requirements of Conditions X.B through X.F above shall be deemed compliance with A.A.C. R18-2-715.01.K.3 to K.5, L, M, N, and 40 CFR 60.165(b)(2)(ii). [A.A.C. R18-2-325]

H. CMS for SO_2

The Permittee shall demonstrate that the SO_2 continuous monitoring systems required by Condition II.B.1.c(1) of this Attachment shall meet all of the following requirements:

1. Each SO_2 continuous monitoring system shall meet the specifications under 40 CFR 60, Appendix B, Performance Specification 6.

2. Each SO_2 continuous monitoring system installed and operated under this Condition shall also meet the quality assurance requirements of 40 CFR 60, Appendix F, Procedure 1.

3. The Permittee shall notify the Director in writing at least 30 days in advance of the start of the relative accuracy test audit (RATA) procedures performed on each continuous monitoring system.

4. The Director shall approve the location of all sampling points for monitoring SO_2 concentrations and stack gas volumetric flow rates in writing before installation and operation of measurement instruments.

5. The span of each continuous monitoring system for the acid plant tail stack, vent fume stack, and aisle scrubber stack shall be set at a SO_2 concentration of zero to 0.20 percent by volume.

6. The span of the continuous monitoring system for the bypass stack shall be set at a SO_2 concentration of zero to 20 percent by volume.

7. The zero (or low-level value between 0 and 20 percent of the span value) and span (50 to 100 percent of span value) calibration drifts shall be checked at least once each operating day in accordance with a written procedure. The zero and span must, at a minimum, be adjusted whenever either the 24-hour zero drift or the 24-hour span drift exceeds two times the limit in 40 CFR Part 60, Appendix B, Performance Specification 2. The system must allow the amount of the excess zero and span drift to be recorded and quantified.

8. The Permittee shall maintain on hand and ready for immediate installation sufficient spare or duplicate systems for the continuous monitoring system equipment required by this Condition to allow for the replacement within six hours of any monitoring system equipment part that fails or malfunctions during operation.

[40 CFR 60.13(a), (c), (d)(1), 165(b)(2)(ii), and A.A.C. R18-2-C1302.E.7]

9. Permit Shield

Compliance with requirements of Condition X.H above shall be deemed compliance with 40 CFR 60.165(b)(2)(ii) and A.A.C. R18-2-C1302.E.7.

[A.A.C. R18-2-325]

I. RMS for SO_2

The Permittee shall develop and implement a roofline fugitive emissions monitoring plan for the continuous monitoring system required by Condition II.B.1.c(2) of this Attachment. The Permittee shall submit the initial plan to the Department and EPA Region IX for review and approval by July 1, 2017.

[A.A.C. R18-2-C1302.E.8]

1. The roofline fugitive emissions monitoring plan required by Condition X.I above must address the following requirements:

   a. Measurement of fugitive emissions from, at a minimum, the Converter, Electric Furnace, Anode Furnace and IsaSmelt® systems that is representative of total fugitive SO_2 emissions.

   b. Each measurement system shall include at least one SO_2 analyzer and sufficient sampling locations that ensure collection of a representative sample along the roof monitor for each monitor system. The number of sample probes and their locations for each monitoring system shall account for the physical configuration of the vent, the locations of emitting activities relative to the vent, and heat generated by the equipment served by the vent.

   c. Each measurement system shall include validation of adequate velocity for

flow measurements and sufficient flow and temperature sensors to ensure calculation of representative exhaust flows through each vent. The number of such sensors and their locations for each monitoring system shall account for the physical configuration of the vent, the locations of emitting activities relative to the vent, and heat generated by the equipment served by the vent.

d. Each measurement system shall include an onsite data collection system that continuously logs and stores the measured SO_2 concentration, the measured flow velocity, and the measured temperature

e. An appropriate range for zero-span drift shall be established for all SO_2 analyzers to ensure proper calibration and operation. Unless otherwise provided in the roofline fugitive emissions monitoring plan required by Condition X.I above, the zero (or low-level) value determination shall be made using a gas containing between zero to 20 percent of the span value for SO_2 and the span (or high-level) value determination shall be made using a certified gas with a value between 50 and 100 percent of the span value for SO_2. For each SO_2 analyzer, a daily zero-span check shall be performed by introducing zero gas and a known concentration of span gas to the analyzer. If the zero or span drift for an analyzer is greater than five percent of the span gas concentration for five consecutive days or greater than 10 percent of the span gas concentration for one day, the analyzer shall be found to be operating improperly and appropriate measures shall be taken to return the analyzer to proper operation. The zero-span check shall be repeated after any such corrective action is taken.

f. All SO_2 analyzers shall be inspected quarterly by the Permittee and inspected annually by an independent auditor. The inspections shall be conducted in accordance with the data accuracy assessment requirements of 40 CFR 60, Appendix F, Procedure 1,Section 5 or as otherwise provided in the roofline fugitive emissions monitoring plan required by Condition X.I above. The quarterly inspections consist of two certified concentrations of SO_2 to each sample probe system and comparing the known concentrations to the concentrations logged by the corresponding on-site data collection system to generate a relative error for each system.

g. The flow and temperature data shall be checked daily for proper operation of flow and temperature sensors in accordance with the roofline fugitive emissions monitoring plan required by Condition X.I above. If a flow or temperature sensor is found to be operating improperly, appropriate measures shall be taken to return the sensor to proper operation.

h. All temperature sensors shall be inspected annually. The inspection shall be conducted according to the manufacturer's specification. A temperature sensor tolerance range representative of proper sensor operation shall be established in the roofline fugitive emissions monitoring plan required by Condition X.I above. If a temperature sensor is found to measure outside of an established tolerance range, the sensor shall be found to be operating improperly and appropriate measures shall be taken to return the sensor to proper operation.

i. All flow sensors shall be calibrated semi-annually with calibration tools according to the manufacturer's specifications. A calibration tool range representative of proper sensor operation shall be established in the roofline fugitive emissions monitoring plan required by Condition X.I above. If a flow sensor is found to measure outside of an established range, the sensor shall be found to be operating improperly and appropriate measures shall be taken to return the sensor to proper operation.

[A.A.C. R18-2-C1302.E.8.a]

2. The Permittee shall operate and maintain the continuous monitoring system required by Condition II.B.1.c(2) of this Attachment in accordance with the roofline fugitive emissions monitoring plan required by Condition X.I above and as approved by the Department and EPA Region IX, except as provided herein. Until receiving initial approval of the plan, the Permittee shall operate and maintain the continuous monitoring system required by Condition II.B.1.c(2) of this Attachment in accordance with the plan as initially submitted pursuant to Condition X.I above. The Permittee shall keep the plan current and consistent with Condition X.I above. The Permittee shall maintain a current copy of the plan onsite and available for review and inspection upon request. The Department and/or EPA Region IX may require the Permittee to revise the plan if determined to be inconsistent with Condition X.I above. Within 60 days of receiving written notification from the Department or EPA Region IX specifying such inconsistency, the Permittee shall submit a proposal to the Department and EPA Region IX that addresses the inconsistency.

[A.A.C. R18-2-C1302.E.8.b]

3. Permit Shield

Compliance with requirements of Condition X.I above shall be deemed compliance with A.A.C. R18-2-C1302.E.8.

[A.A.C. R18-2-325]

J. CMS for NO_X

The NO_X CMS required by Condition IV.D.2.b of this Attachment shall comply with the following:

1. General Requirements

a. The NO_X CMS shall meet 40 CFR Part 60, Appendix B, "Performance Specification 6 - Specifications and Test Procedures for Continuous Emission Rate Monitoring Systems in Stationary Sources." The CMS shall follow a quality assurance procedure equivalent to 40 CFR 60 Appendix F.

[A.A.C. R18-2-306.A.3.d]

b. All the stack gas volumetric flow rate monitoring systems shall meet 40 CFR Part 60, Appendix B, "Performance Specification 6 - Specifications and Test Procedures for Continuous Emission Rate Monitoring Systems in Stationary Sources."

[A.A.C. R18-2-306.A.3.d]

c. For the purpose of the NO_X CMS performance evaluation, the reference method for Relative Accuracy Test procedure under 40 CFR Part 60, Appendix B, Performance Specification 2 (as incorporated by reference by 40 CFR Part 60, Appendix B, Performance Specification 6), shall be Method 7.E (or any alternative approved by EPA) and the pollutant gas for preparing calibration gas mixture and calibration checks shall be a mixture of nitrogen oxide and nitrogen dioxide.

[A.A.C. R18-2-306.A.3.d]

d. The Permittee shall notify the Director in writing at least 30 days in advance of the start of relative accuracy test audit (RATA) procedures performed on the NO_X CMS continuous monitoring systems.

[A.A.C. R18-2-306.A.3.d]

e. Location change of all sampling points for monitoring NO_X concentrations and stack gas volumetric flow rates shall be approved in writing by the Director.

[A.A.C. R18-2-306.A.3.d]

f. The measurement system installed and used is subject to the manufacturer's recommended zero adjustment and calibration procedures at least once per 24-hour operating period unless the manufacturer specifies or recommends calibration at shorter intervals, in which case specifications or recommendations shall be followed. The Permittee shall make available a record of these procedures that clearly shows instrument readings before and after zero adjustment and calibration.

[A.A.C. R18-2-306.A.3.d]

g. The Permittee shall measure at least 95 percent of the hours during which NO_X emissions occurred in any month, using the continuous monitoring systems.

[A.A.C. R18-2-306.A.3.d]

h. The Permittee shall maintain on hand and ready for immediate installation sufficient spare parts or duplicate systems for the NO_X continuous monitoring equipment required by this Condition to allow for the replacement within twenty-four hours of any monitoring equipment part which fails or malfunctions during operation. If the Permittee, due to extenuating circumstances, is not able to locate the spare parts or duplicate systems for a monitoring equipment part which fails or malfunctions during operation within a twenty-four hour timeframe, the Permittee shall replace the monitoring equipment no later than 72 hours. If the Permittee is not able to replace the part or system within 72 hours, the Permittee shall request for an extension along with the justification for the same.

[A.A.C. R18-2-306.A.2]

2. Calibration Drift Checks

a. The Permittee shall check the zero (or low-level value between 0 and 20% of span value) and span (50 to 100 percent of span value) calibration drifts (CD) at least once daily in accordance with a written procedure prescribed by the manufacturer.

[A.A.C. R18-2-306A.3.d]

b. Zero and span drift adjustments

(1) The zero and span shall, as a minimum, be adjusted whenever the 24-hr zero drift or 24-hr span drift exceeds + 5% of the span value.

(2) The CMS shall allow for the amount of excess zero and span drift measured at the 24-hour interval checks to be recorded and quantified.

[A.A.C. R18-2-306A.3.d]

3. Minimum Frequency of Operation

a. Except during periods of system breakdowns, repairs, calibration checks, and zero and span adjustments, the NO_X CMS shall be in continuous operation.

[A.A.C. R18-2-306.A.3.d]

b. For purposes of NO_X CMS, continuous monitoring means the taking and recording of at least one measurement of sulfur dioxide concentration and stack gas flow rate reading from the effluent of each affected stack, outlet or other approved measurement location in each 15-minute period. Fifteen-minute periods start at the beginning of each clock hour, and run consecutively. An hour of smelter emissions is continuously monitored if the emissions from all monitored stacks, outlets, or other approved measurement locations are measured for at least 45 minutes of any hour.

[A.A.C. R18-2-306A.3.d]

c. If the Permittee can demonstrate to the Director that measurement of stack gas volumetric flow in the outlet of any particular piece NO_X control equipment would yield inaccurate results or would be technologically infeasible, then the Director may allow measurement of the flow rate at an alternative sampling point.

[A.A.C. R18-2-306A.3.d]

4. Data reduction procedures

[A.A.C. R18-2-306A.3.d]

a. The Permittee shall reduce all data from the NO_X CMS to 1-hour averages. The 1-hour averages shall be computed from four or more data points equally spaced over each 1-hour period.

b. Data recorded during periods of system breakdowns, repairs, calibration checks, and zero and span adjustments shall not be included in the data averages computed under the previous paragraph. An arithmetic or integrated average of all data may be used. The data may be recorded in reduced or non-reduced form.

c. During the periods of system breakdowns, repairs, calibration checks and zero and span adjustments, the Permittee shall calculate substitute data for that period according to the following procedures:

(1) For a missing data period less than or equal to 24 hours, substitute the average of the hourly NO_X concentrations recorded by the CMS for the hour before and the hour after the missing data period.

(2) For a missing data period greater than 24 hours, substitute the greater of:

(a) The 90th percentile hourly NO_X concentrations recorded by the CMS during the previous 720 quality-assured monitor operating hours; or

(b) The average of the hourly NO_X concentrations recorded by the CMS for the hour before and the hour after the missing data period.

5. Recordkeeping and Reporting Requirements

a. The Permittee shall maintain records of any periods during which a continuous monitoring system or monitoring device is in operative.

[A.A.C. R18-2-306.A.3.c]

b. The Permittee shall maintain a file of all measurements, including continuous monitoring system, monitoring device, and performance testing measurements; all continuous monitoring system performance evaluations; all continuous monitoring system or monitoring device calibration checks; adjustments and maintenance performed on these systems or devices; and all other information required by this Condition recorded in a permanent form suitable for inspection. The file shall be retained for at least five years following the date of such measurements, maintenance, reports and records.

[A.A.C. R18-2-306.A.3.c and -306.A.4.b]

6. Semiannual NO_x Emissions and Monitoring Systems Performance Reports

[A.A.C. R18-2-306.A.3.c]

a. The Permittee shall submit an Excess Emissions and Monitoring Systems Performance (EEMSP) report and/or a summary report form to the Department semiannually, unless the total duration of excess emissions for the reporting period is less than 1 percent of the total operating time for the reporting period and the continuous monitoring system downtime for the reporting period is less than 5 percent of the total operating time for the reporting period, in which case only the summary report form shall be submitted and the excess emissions report need not be submitted unless requested by the Department. All semiannual reports shall be postmarked by the 30th day following the end of each six-month period.

b. The summary report form submission required in the Condition X.J.6.a above shall be in the format similar to the one specified in 40 CFR 60.7(d). Each EMSP report shall include the following information:

(1) The magnitude of excess emissions computed, any conversion

factor(s) used, and the date and time of commencement and completion of each time period of excess emissions. The process operating time during the reporting period.

(2) Specific identification of each period of excess emissions that occurs during startups, shutdowns, and malfunctions of the affected facility. The nature and cause of any malfunction (if known), the corrective action taken or preventative measures adopted.

(3) The date and time identifying each period during which the continuous monitoring system was inoperative except for zero and span checks and the nature of the system repairs or adjustments.

(4) When no excess emissions have occurred or the CMS has not been inoperative, repaired, or adjusted, such information shall be stated in the report.

XI. CONVERTER ARSENIC CHARGING RATE

A. Arsenic Charging Rate Determination

1. The Permittee shall determine the converter arsenic charging rate as follows:
[40 CFR 61.174(f)]

a. Collect daily grab samples of copper matte and any lead matte charged to the copper converters.

b. Each calendar month, from the daily grab samples collected, put together a composite copper matte sample and a composite lead matte sample. Analyze the composite sample individually using Method 108A, 108B, or 108C to determine the weight percent of inorganic arsenic contained in each sample.

c. Calculate the converter arsenic charging rate once per month using the following equation:

$$R_c = \sum (i=1 \text{ to } n) : \{\underline{(A_c \times W_{ci}) + (A_l \times W_{li})}\} \over \{100\ H_c\}$$

R_c= Converter arsenic charging rate (kg/hour or pounds/hour).

A_c= Monthly average weight percent of arsenic in the copper matte charged during the month (%) as determined under Condition XI.A.1.b above.

A_1= Monthly average weight percent of arsenic in the lead matte charged during the month (%)

W_{ci}= Total weight of copper matte charged to a copper converter during the month (kg).

W_{li}= Total weight of lead matte charged to a copper converter during the month (kg).

H_c= Total number of hours the copper converter department was in operation during the month (h).

n = Number of copper converters in operation during the month.

d. Determine an annual arsenic charging rate for the copper converter department once per month by computing the arithmetic average of the 12 monthly converter arsenic charging rate values (Rc) for the preceding 12-month period.

2. If the total arsenic charging rate for the copper converter department averaged over a 1-year period is less than 75 kg/hr (165 lb/hr), the Permittee shall comply with the recordkeeping and reporting requirements in Condition XI.B below. If the charging rate is greater than 75 kg/hr (165 lb/hr), the Permittee shall comply with the additional requirements under 40 CFR 61.172(b) through (f), 40 CFR 61.173, 40 CFR 61.174(a) through (e), 40 CFR 61.175, 40 CFR 61.176(a) and (b), and 40 CFR 61.177(a) through (e).

[40 CFR 61.172(a)]

B. Recordkeeping and Reporting Requirements

1. The Permittee shall maintain at the source for a period of at least 2 years and make available to the Director upon request the following records:

a. For each copper converter, a daily record of the amount of copper matte charged to the copper converter and the total hours of operation.

[40 CFR 61.176(c)(1)]

b. For each copper converter department, a monthly record of the weight percent of arsenic contained in the copper matte as determined under Condition XI.A.1 above.

[40 CFR 61.176(c)(2)]

c. For each copper converter department, the monthly calculations of the average annual arsenic charging rate for the preceding 12-month period as determined under Condition XI.A.1 above.

[40 CFR 61.176(c)(3)]

2. The Permittee shall submit annually a written report to the Director that includes the monthly computations of the average annual converter arsenic charging rate as calculated under Condition XI.A.1.d above. The annual report shall be postmarked by the 30th day following the end of each calendar year.

[40 CFR 61.177(f)]

C. Permit Shield

Compliance with requirements of Conditions XI above shall be deemed compliance with 40 CFR 61.172(a), 174(f), 176(c), and 177(f).

[A.A.C. R18-2-325]

XII. ANODE FURNACES AND UTILITY VESSEL

A. Emission Limitations/Standards

Except as provided in Conditions XII.A.1 and 2 below, the Permittee shall not cause, allow or permit to be emitted into the atmosphere, any plume or effluent from the anode furnaces and utility vessel which exceeds 20% opacity as measured by EPA Reference Method 9.

[A.A.C. R18-2-702.B.3]

1. The Permittee shall not cause, allow or permit to be emitted into the atmosphere, any plume or effluent from the anode furnaces and utility vessel during periods when low blister copper is present which exceeds 33% opacity as measured by EPA Reference Method 9.

[A.A.C. R18-2-702.E]

2. The Permittee shall not cause, allow or permit to be emitted into the atmosphere, any plume or effluent from the anode furnaces and utility vessel during periods when poling takes place in the anode vessel which exceeds 33% opacity as measured by EPA Reference Method 9.

[A.A.C. R18-2-702.E]

B. Air Pollution Control Requirements

The Permittee shall maintain and *operate the steam injection system associated with each of the anode furnaces and utility vessel to minimize particulate matter emissions when natural gas is being used for reducing.*

[A.A.C. R18-2-306.A.2 and -331.A.3.e]
[Material permit conditions are identified by italics underline]

C. Monitoring, Recordkeeping, and Reporting Requirements

A certified Method 9 observer shall conduct a bi-weekly (once in two weeks) visual survey of visible emissions from the anode furnaces and utility vessels building, when in operation, as per the procedure in Condition I.E of this Attachment.

[A.A.C. R18-2-306.A.3.c]

D. Permit Shield

Compliance with requirements of Condition XII above shall be deemed compliance with A.A.C. R18-2-702.B.3 and E.

[A.A.C. R18-2-325]

XIII. BOILERS AND HEATERS IN SMELTER

A. IsaSmelt® Auxiliary Boiler

1. Fuel Limitation

a. The Permittee shall burn only natural gas in the IsaSmelt® auxiliary boiler.
[A.A.C.R18-2-306.A.2]

b. Monitoring, Recordkeeping and Reporting Requirements

(1) The Permittee shall maintain records of the amounts of fuel combusted during each calendar month.
[40 CFR 60.48c(g)(2)]

(2) All records of monthly fuel combusted shall be maintained by the Permittee for a period of two years following the date of such record.
[40 CFR 60.48c(i)]

c. Permit Shield

Compliance with requirements of Condition XII.A.1 above shall be deemed compliance with the 40 CFR 60.48c(g) and (i).
[A.A.C. R18-2-325]

2. Nitrogen Oxides (NO_X)

a. Emission Limitations and Standards

The Permittee shall not discharge or cause to be discharged from the IsaSmelt® auxiliary boiler NO_X emissions in excess of 1.8 lb/hr.
[A.A.C. R18-2-406.A.4]

b. Performance Testing Requirements

The Permittee shall conduct or cause to be conducted, a performance test on the IsaSmelt® auxiliary boiler in the first year of the permit term for NO_X to demonstrate compliance with the emission limits specified in Condition XIII.A.2.a above. EPA Reference Method 7E shall be used to determine the emissions of NO_X.
[A.A.C. R18-2-306.A.3.c and -312]

B. Change Room Water Heater and Acid Plant Preheater

1. Fuel Limitations

The Permittee shall burn only natural gas in the change room water heater and the acid plant preheater.
[A.A.C. R18-2-306.A.2]

2. Particulate Matter and Opacity

a. Emission Limitations and Standards

(1) The Permittee shall not cause, allow or permit the emission of particulate matter, caused by the combustion of fuel in the change room water heater and the acid plant preheater in excess of the amount calculated by the following equation:

[A.A.C. R18-2-724.C.1]

$E = 1.02Q^{0.769}$

Where:

E = the maximum allowable particulate emissions rate in pounds mass per hour.

Q = the heat input in million Btu per hour.

(2) The Permittee shall not cause, allow or permit to be emitted to the atmosphere from the change room water heater and the acid plant preheater any plume or effluent which exceeds 15% opacity.
[A.A.C. R18-2-724.J]

b. Monitoring, Reporting, and Recordkeeping Requirements

(1) A certified Method 9 observer shall conduct a monthly visual survey of visible emissions from the stacks of the change room water heater and the acid plant preheater as per the procedure in Condition I.E of this Attachment.
[A.A.C. R18-2-306.A.3.c]

(2) The Permittee shall report all 6-minute periods during which the visible emissions from the change room water heater and the acid plant preheater exceeds 15% opacity.
[A.A.C. R18-2-724.J]

3. Permit Shield

Compliance with requirements of Condition XIII.B above shall be deemed compliance with A.A.C. R18-2-724.C.1 and J.
[A.A.C. R18-2-325]

XIV. BOILERS AND PROCESS HEATERS SUBJECT TO NESHAP SUBPART DDDDD

A. Applicability

This Condition applies to boilers and process heaters identified in Attachment "G" as subject to National Emission Standards for Hazardous Air Pollutants (NESHAP) for Industrial, Commercial, and Institutional Boilers and Process Heaters under 40 CFR, Subpart DDDDD.
[40 CFR 63.7485]

B. Fuel Limitation

The Permittee shall burn only natural gas in the process boilers and process heater.
[A.A.C. R18-2-306.A.2]

C. Boiler Tune-ups

1. The Permittee shall conduct an annual tune-up for each affected facility with a heat

input capacity of 10 MMBtu/hour or greater according to the procedure described in Condition XIV.C.3.a below. The annual tune-up shall be conducted within 13 months of the previous tune-up.

[40 CFR 63.7500(a), 7515 (d), and Table 3, Item 3]

2. The Permittee shall conduct a tune- up every five years for each affected facility with a heat input capacity of less than or equal to 5 MMBtu/hour according to the procedure described in Condition XIV.C.3.a below. The five year tune-up shall be conducted within 61 months of the previous tune-up.

[40 CFR 63.7500(a), 63.7500(e), 7515(d), and Table 3, Item 1]

3. Tune-up Procedure

a. The Permittee shall conduct tune-up required in Conditions XIV.C.1 and 2 above according to the following steps:

[40 CFR 63.7540(a)(10)]

(1) Inspect the burner, and clean or replace any components of the burner as necessary. The Permittee may delay the burner inspection until the next scheduled unit shutdown;

[40 CFR 63.7540(a)(10)(i)]

(2) Inspect the flame pattern, as applicable, and adjust the burner as necessary to optimize the flame pattern. The adjustment should be consistent with the manufacturer's specifications, if available;

[40 CFR 63.7540(a)](10)(ii)]

(3) Inspect the system controlling the air-to-fuel ratio, as applicable, and ensure that it is correctly calibrated and functioning properly. The Permittee may delay the burner inspection until the next scheduled unit shutdown;

[40 CFR 63.7540(a)(10)(iii)]

(4) Optimize total emissions of CO. This optimization should be consistent with the manufacturer's specifications, if available, and with any NO_x requirement to which the unit is subject;

[40 CFR 63.7540(a)(10)(iv)]

(5) Measure the concentrations in the effluent stream of CO in parts per million, by volume, and oxygen in volume percent, before and after the adjustments are made (measurements may be either on a dry or wet basis, as long as it is the same basis before and after the adjustments are made). Measurements may be taken using a portable CO analyzer; and

[40 CFR 63.7540(a)(10)(v)]

(6) Maintain on-site and submit, if requested by the Administrator, an annual report containing the information in Conditions XIV.C.3.a(6)(a) through (c) below:

[40 CFR 63.7540(a)(10)(vi)]

(a) The concentrations of CO in the effluent stream in parts per million by volume, and oxygen in volume percent,

measured at high fire or typical operating load, before and after the tune-up of the boiler or process heater;
[40 CFR 63.7540(a)(10)(vi)(A)]

(b) A description of any corrective actions taken as a part of the tune-up; and
[40 CFR 63.7540(a)(10)(vi)(B)]

(c) The type and amount of fuel used over the 12 months prior to the tune-up, but only if the unit was physically and legally capable of using more than one type of fuel during that period. Units sharing a fuel meter may estimate the fuel used by each unit.
[40 CFR 63.7540(a)(10)(vi)(C)]

b. If any affected boiler or process heater has a continuous oxygen trim system that maintains an optimum air to fuel ratio, or a heat input capacity of less than or equal to 5 million Btu per hour, the Permittee must conduct a tune-up of the boiler or process heater every 5 years as specified in Condition XIV.C.3.a(1) through (5) above to demonstrate continuous compliance. The Permittee may delay the burner inspection specified in Condition XIV.C.3.a(1) above until the next scheduled or unscheduled unit shutdown, but shall inspect each burner at least once every 72 months.
[40 CFR 63.7540(a)(12)]

c. If the affected boiler or heater is not operating on the required date for a tune-up, the Permittee shall conduct tune-up within 30 calendar days of startup.
[40 CFR 63.7540(a)](13)]

4. Notification and Reporting Requirements

a. The Permittee shall submit to the Administrator all of the applicable notifications in §§63.7(b) and (c), 63.8(e), (f)(4) and (6), and 63.9(b) through (h) by the dates specified.
[40 CFR 63.7545(a)]

b. The Permittee shall submit a Notification of Compliance Status report containing all the applicable information specified in Conditions XIV.C.4.b(1) through (6) below:
[40 CFR 63.7545(e)]

(1) A description of the affected unit(s) including identification of which subcategories the unit is in, the design heat input capacity of the unit, a description of the add-on controls used on the unit to comply with 40 CFR 63, Subpart DDDDD, description of the fuel(s) burned, and justification for the selection of fuel(s) burned during the compliance demonstration.
[40 CFR 63.7545(e)(1)]

(2) A signed certification that the Permittee has met all applicable work practice standards.
[40 CFR 63.7545(e)(6)]

(3) In the event of a deviation, the Permittee shall submit a description of the deviation, the duration of the deviation, and the corrective action taken in the Notification of Compliance Status report.
[40 CFR 63.7545(e)(7)]

(4) The Permittee shall submit a Compliance report semiannually, annually, biennially, or every 5 years according to the requirements in 40 CFR 63.7550(b).
[40 CFR 63.7550(b) and Item 1, Table 9]

(a) Each compliance report shall cover the semiannual reporting period from January 1 through June 30 or the semiannual reporting period from July 1 through December 31. Annual, biennial, and 5-year compliance reports must cover the applicable 1, 2, or 5 year periods from January 1 to December 31.
[40 CFR 63.7550(b)(3)]

(b) Each compliance report must be postmarked or submitted no later than July 31 or January 31, whichever date is the first date following the end of the semiannual reporting period. Annual, biennial, and 5year compliance reports must be postmarked or submitted no later than January 31.
[40 CFR 63.7550(b)(4)]

(5) The Compliance report shall contain the following information:
[40 CFR 63.7550(c)(5)]

(a) Company and Facility name and address.
[40 CFR 63.7550(c)(5)(i)]

(b) Process unit information, emissions limitations, and operating parameter limitations.
[40 CFR 63.7550(c)(5)(ii)]

(c) Date of report and beginning and ending dates of the reporting period.
[40 CFR 63.7550(c)(5)(iii)]

(d) The total operating time during the reporting period.
[40 CFR 63.7550(c)(5)(iv)]

(e) The date of the most recent tune-up for each unit subject to only the requirement to conduct an annual, biennial, or 5-year tune-up according to Condition XIV.C.3.a and b. The report shall include the date of the most recent burner inspection if it was not done annually or on a 5-year period and was delayed until the next scheduled or unscheduled unit shutdown.
[40 CFR 63.7550(c)(5)(xiv)]

(6) The Permittee shall submit all reports electronically using CEDRI that is accessed through the EPA's Central Data Exchange (CDX)

(*www.epa.gov/cdx*). However, if the reporting form specific to this subpart is not available in CEDRI at the time that the report is due, the Permittee shall submit the report to the Administrator at the appropriate address listed in 40 CFR 63.13. At the discretion of the Administrator, the Permittee shall also submit these reports, to the Administrator in the format specified by the Administrator.

[40 CFR 63.7550(h)(3)]

5. Recordkeeping Requirements

a. The Permittee shall maintain the following:

[40 CFR 63.7555(a)]

(1) A copy of each notification and report submitted in accordance with Condition XIV.C.4 above.

[40 CFR 63.7555(a)(1)]

(2) Records of performance tests, fuel analyses, or other compliance demonstrations and performance evaluations as required in §63.10(b)(2)(viii).

[40 CFR 63.7555(a)(2)]

(3) Records of the calendar date, time, occurrence and duration of each startup and shutdown.

[40 CFR 63.7555(d)(9)]

(4) Records of the type(s) and amount(s) of fuels used during each startup and shutdown.

[40 CFR 63.7555(d)(10)]

b. The Permittee shall maintain the records in a form suitable and readily available for expeditious review, according to 40 CFR 63.10(b)(1).

[40 CFR 63.7560(a)]

c. The Permittee shall keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record in accordance with 40 CFR 63.10(b)(1).

[40 CFR 63.7560(b)]

d. The Permittee shall keep each record on site, or they must be accessible from on site (for example, through a computer network), for at least 2 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record, according to §63.10(b)(1). The Permittee can keep the records off site for the remaining 3 years.

[40 CFR 63.7560(c)]

6. Permit Shield

Compliance with requirements of Condition XIV above shall be deemed compliance with 40 CFR 63.7485, 7500(a), (a)(1), (e), 7510(e), 7515(d), 7540(a)(10), (12), (13), 7545(a), (e)(1), (6), (7), (8)(i), (ii), 7550(b)(1). (2), (3), (4), (c)(5)(i) to (v), (xiv), (h)(3), 7555(a)(1), (2), (d)(9), (10), and 7560.

[A.A.C. R18-2-325]

XV. SCREENING MACHINE

A. Applicability

This Condition applies to the Finlay Screening Machine.

B. Particulate Matter and Opacity

1. Emission Limitations and Standards

a. The Permittee shall not cause, allow or permit the discharge of particulate matter into the atmosphere in any one hour from the Finlay Screening Machine subject to the provisions of this Condition in total quantities in excess of the amounts calculated by one of the following equations:

[A.A.C.R18-2-721.B and -722.B]

(1) For process sources having a process weight rate of 60,000 pounds per hour (30 tons per hour) or less, the maximum allowable emissions shall be determined by the following equation:

$E = 4.10P^{0.67}$

where:

E = the maximum allowable particulate emissions rate in pounds-mass per hour.

P = the process weight rate in tons-mass per hour.

(2) For process sources having a process weight rate greater than 60,000 pounds per hour (30 tons per hour), the maximum allowable emissions shall be determined by the following equation:

$E = 55P^{0.11} - 40$

Where E and P are defined as indicated in Condition XV.B.1.a(1) above.

b. The opacity of any plume or effluent from any process source subject to the provisions of this Condition shall not be greater than 20% as measured by EPA Reference Method 9.

[A.A.C. R18-2-702.B.3]

c. If the presence of uncombined water is the only reason for an exceedance of the visible emissions requirements in Condition XV.B.1.b above, the exceedance shall not constitute a violation of the applicable opacity limit.

[A.A.C. R18-2-702.C]

C. Air Pollution Control Requirements

1. The Permittee shall operate Spray bar pollution controls in accordance with "EPA

Control of Air Emissions From Process Operations In The Rock Crushing Industry" (EPA 340/1-79-002), "Wet Suppression System" (pages 15-34, amended as of January 1979 (and no future amendments or editions)), as incorporated herein by reference and on file with the Office of the Secretary of State, with placement of spray bars and nozzles as required by the Director to minimize air pollution.

[A.A.C.R18-2-722.D]

2. The fugitive emissions from the Finlay Screening Machine shall be controlled in accordance with Condition XXII of Attachment "B."

[A.A.C.R18-2-722.E]

D. Monitoring, Recordkeeping, and Reporting Requirements

1. A certified Method 9 observer shall conduct a bi-weekly (once in two weeks) visual survey of visible emissions emanating from the Finlay Screening Machine, when in operation, as per the procedure in Condition I.E above.

[A.A.C.R18-2-722.G]

2. The Permittee shall maintain a record of daily production rates of material processed by the Finlay Screening Machine.

[A.A.C.R18-2-722.G]

E. Permit Shield

Compliance with requirements of Condition XV above shall be deemed compliance with A.A.C. R18-2-702.B.3, C, -721.B, -722.B, D, E, and G.

[A.A.C. R18-2-325]

XVI. ELECTROLYTIC REFINERY OPERATIONS

A. Boiler

1. Fuel Limitation

The Permittee shall burn only natural gas in the boiler.

[A.A.C.R18-2-306.02]

2. Monitoring, Recordkeeping and Reporting Requirements

a. The Permittee shall maintain records of the amounts of fuel combusted during each calendar month.

[40 CFR §60.48c(g)(2)]

b. All records monthly fuel combusted shall be maintained by the Permittee for a period of two years following the date of such record.

[40 CFR §60.48c(i)]

3. Permit Shield

Compliance with requirements of Condition XVI.A above shall be deemed compliance with the 40 CFR §60.48c(g)(2) and (i).

[A.A.C. R18-2-325]

B. Electrolytic Refinery

1. Particulate Matter and Opacity

a. Emission Limitations and Standards

(1) The Permittee shall not cause, allow or permit the discharge of particulate matter from the stacks associated with the refinery into the atmosphere in excess of the amounts calculated by one of the following equations:

[A.A.C. R18-2-730.A.1]

(a) For process sources having a process weight rate of 60,000 pounds per hour (30 tons per hour) or less, the maximum allowable emissions shall be determined by the following equation:

$E = 4.1P^{0.67}$

Where:

E = the maximum allowable particulate emissions rate in pounds-mass per hour.

P = the process weight rate in tons-mass per hour

(b) For process sources having a process weight rate greater than 60,000 pounds per hour (30 tons per hour), the maximum allowable emissions shall be determined by the following equation:

$E = 55P^{0.11} - 40$

Where "E" and "P" are defined as indicated in Condition XVI.B.1.a(1)(a) above.

(2) Opacity

The Permittee shall not cause to be discharged into the atmosphere, any visible emissions from stacks associated with refinery which exhibit greater than 20 percent opacity.

[A.A.C. R18-2-702.B.3]

b. Air Pollution Control Requirements

The Permittee shall maintain and *operate the baghouse associated with the anode slimes dryer for minimizing emissions of particulate matter*.

[A.A.C. R18-2-306.A.2 and -331.A.3.d]
[Material permit conditions are identified by underline and italics]

c. Monitoring, Recordkeeping, and Reporting Requirements

A certified Method 9 observer shall conduct a bi-weekly (once in two weeks) visual survey of visible emissions from the stacks associated with refinery, when they are in operation, as per the procedure in Condition I.E of this Attachment.

[A.A.C. R18-2-306.A.3.c]

d. Permit Shield

Compliance with requirements of Condition XVI.B.1 above shall be deemed compliance with A.A.C. R18-2-702.B.3 and -730.A.1.

[A.A.C. R18-2-325]

2. Sulfuric Acid Mist and Volatile Organic Compounds

a. Emission Limitations and Standards

(1) The Permittee shall not cause the emission of gaseous or odorous materials from equipment and operations associated with the refinery process in such quantities or concentrations as to cause air pollution.

[A.A.C. R18-2-730.D]

(2) Materials including solvents or other volatile compounds, acids, and alkalis utilized in the refinery process shall be processed, stored, used, and transported in such a manner and by such means that they will not evaporate, leak, escape or be otherwise discharged into the ambient air so as to cause or contribute to air pollution. Where means are available to reduce effectively the contribution to air pollution from evaporation, leakage, or discharge, the installation and use of such control methods, devices, or equipment shall be mandatory.

[A.A.C. R18-2-730.F]

(3) Where a stack, vent or other outlet is at such a level that fumes, gas, mist, odor, smoke, vapor, or any combination thereof constituting air pollution is discharged to adjoining property, the Director may require the installation of abatement equipment or the alteration of such stack, vent or other outlet by the Permittee thereof to a degree that will adequately dilute, reduce or eliminate the discharge of air pollution to the adjoining property.

[A.A.C. R18-2-730.G]

b. Air Pollution Control Requirements

(1) *The Permittee shall* maintain and *operate the demisters associated with the cathode stripping and washing area in the electrolytic refinery for minimizing emissions of sulfuric acid mist.*

[A.A.C. R18-2-306.A.2 and -331.A.3.d]
[Material permit conditions are identified by underline and italics]

(2) *The Permittee shall* maintain and *operate the two scrubbers*

associated with the electrolyte circulation tanks and electrolyte decant/storage tanks in the electrolytic refinery for minimizing emissions of sulfuric acid mist.

[A.A.C. R18-2-306.A.2 and -331.A.3.d]
[Material permit conditions are identified by underline and italics]

(3) *The Permittee shall* maintain and *operate the scrubber associated with the slimes autoclave in the electrolytic refinery for minimizing emissions of sulfuric acid mist*.

[A.A.C. R18-2-306.A.2 and -331.A.3.d]
[Material permit conditions are identified by underline and italics]

c. Monitoring, Recordkeeping, and Reporting Requirements

The Permittee shall maintain a record of the control measures used at the refinery.

[A.A.C. R18-2-306.A.3.c]

d. Permit Shield

Compliance with requirements of Condition XVI.B.2 above shall be deemed compliance with A.A.C. R18-2-730.D, F, and G.

[A.A.C. R18-2-325]

XVII. ROD PLANT

A. Thermal Breaker Heater

1. Fuel Limitations

The Permittee shall burn only natural gas in the rod plant thermal breaker heater.

[A.A.C. R18-2-306.A.2]

2. Particulate Matter and Opacity

a. Emission Limitations/Standards

(1) The Permittee shall not cause, allow or permit the emission of particulate matter, caused by the combustion of fuel in excess of the amount calculated by the following equation:

[A.A.C. R18-2-724.C.1]

$E = 1.02\ Q^{0.769}$

Where:

E = the maximum allowable particulate emissions rate in pounds mass per hour.

Q = the heat input in million Btu per hour.

(2) The Permittee shall not cause, allow or permit to be emitted to the atmosphere from the rod plant thermal breaker heater any effluent

which exceeds 15% opacity.

[A.A.C. R18-2-724.J]

b. Monitoring, Reporting, and Recordkeeping Requirements

(1) A certified Method 9 observer shall conduct a monthly visual survey of visible emissions from rod plant thermal breaker heater as per the procedure in Condition I.E above.

[A.A.C. R18-2-306.A.3.c]

(2) The Permittee shall report all 6-minute periods during which the visible emissions from any affected equipment exceeds 15% opacity.

[A.A.C. R18-2-724.J]

3. Permit Shield

Compliance with requirements of Condition XVII.A above shall be deemed compliance with A.A.C.R18-2-724.C.1 and J.

[A.A.C. R18-2-325]

B. Rod Plant Shaft Furnace

1. Fuel Limitations

The Permittee shall only burn natural gas as fuel in the rod plant shaft furnace.

[A.A.C. R18-2-306.A2]

2. Particulate Matter and Opacity

a. Emission Limitations and Standards

(1) The Permittee shall not cause, allow or permit the discharge of particulate matter from the rod plant shaft furnace into the atmosphere in excess of the amounts calculated by one of the following equations:

[A.A.C. R18-2-730.A.1]

(a) For process sources having a process weight rate of 60,000 pounds per hour (30 tons per hour) or less, the maximum allowable emissions shall be determined by the following equation:

$E = 4.1P^{0.67}$

Where:

E = the maximum allowable particulate emissions rate in pounds-mass per hour.

P = the process weight rate in tons-mass per hour

(b) For process sources having a process weight rate greater than 60,000 pounds per hour (30 tons per hour), the maximum allowable emissions shall be determined by the following equation:

$E = 55P^{0.11} - 40$

Where "E" and "P" are defined as indicated in Condition XVII.B.2.a(1)(a) above.

(2) The Permittee shall not cause to be discharged into the atmosphere, any visible emissions from the affected units which exhibit greater than 20 percent opacity.

[A.A.C. R18-2-702.B.3]

b. Monitoring, Recordkeeping, and Reporting Requirements

A certified Method 9 observer shall conduct a bi-weekly (once in two weeks) visual survey of visible emissions from the rod plant shaft furnace, when in operation, as per the procedure in Condition I.E of this Attachment.

[A.A.C. R18-2-306.A.3.c]

c. Permit Shield

Compliance with requirements of Condition XVII.B.2 above shall be deemed compliance with A.A.C. R18-2-702.B.3 and -730.A.1.

[A.A.C. R18-2-325]

3. Sulfur Dioxide

a. Emission Limitation and Standards

The Permittee shall not cause, allow, or permit the discharge of sulfur dioxide from the rod plant shaft furnace into the atmosphere in excess of 600 parts per million.

[A.A.C. R18-2-730.A.2]

b. Permit Shield

Compliance with requirements of Condition XVII.B.3 above shall be deemed compliance with A.A.C. R18-2-730.A.2.

[A.A.C. R18-2-325]

4. Nitrogen Oxides

a. Emission Limitations/Standards

The Permittee shall not cause, allow, or permit the discharge of nitrogen oxides from the rod plant shaft furnace into the atmosphere in excess of 500 parts per million.

[A.A.C. R18-2-730.A.3]

b. Permit Shield

Compliance with requirements of Condition XVII.B.4 above shall be deemed compliance with A.A.C. R18-2-730.A.3.

[A.A.C. R18-2-325]

5. Volatile Organic Compounds (VOCs)

a. Emission Limitations and Standards

(1) The Permittee shall not cause the emission of gaseous or odorous materials in such quantities or concentrations as to cause air pollution.

[A.A.C. R18-2-730.D]

(2) Materials including solvents or other volatile compounds, acids, and alkalis shall be processed, stored, used, and transported in such a manner and by such means that they will not evaporate, leak, escape or be otherwise discharged into the ambient air so as to cause or contribute to air pollution. Where means are available to reduce effectively the contribution to air pollution from evaporation, leakage, or discharge, the installation and use of such control methods, devices, or equipment shall be mandatory.

[A.A.C. R18-2-730.F]

(3) Where a stack, vent or other outlet is at such a level that fumes, gas, mist, odor, smoke, vapor, or any combination thereof constituting air pollution is discharged to adjoining property, the Director may require the installation of abatement equipment or the alteration of such stack, vent or other outlet by the Permittee thereof to a degree that will adequately dilute, reduce or eliminate the discharge of air pollution to the adjoining property.

[A.A.C. R18-2-730.G]

b. Permit Shield

Compliance with requirements of Condition XVII.B.5 above shall be deemed compliance with A.A.C. R18-2-730.D, F, and G.

[A.A.C. R18-2-325]

XVIII. MISCELLANEOUS STORAGE TANKS

A. Applicability

This Condition applies to the following tanks at the facility:

1. Sulfuric acid tanks

2. Used oil tanks

3. Alcohol tanks

B. Emission Limitations/Standards

1. The Permittee shall not cause the emission of gaseous or odorous materials in such quantities or concentrations as to cause air pollution.

[A.A.C. R18-2-730.D]

2. Materials including solvents or other volatile compounds, acids, and alkalis shall be processed, stored, used, and transported in such a manner and by such means that they will not evaporate, leak, escape or be otherwise discharged into the ambient air so as to cause or contribute to air pollution. Where means are available to reduce effectively the contribution to air pollution from evaporation, leakage, or discharge, the installation and use of such control methods, devices, or equipment shall be mandatory.

[A.A.C. R18-2-730.F]

3. Where a stack, vent or other outlet is at such a level that fumes, gas, mist, odor, smoke, vapor, or any combination thereof constituting air pollution is discharged to adjoining property, the Director may require the installation of abatement equipment or the alteration of such stack, vent or other outlet by the Permittee thereof to a degree that will adequately dilute, reduce or eliminate the discharge of air pollution to the adjoining property.

[A.A.C. R18-2-730.G]

C. Permit Shield

Compliance with requirements of Condition XVIII above shall be deemed compliance with A.A.C. R18-2-730.D, F, and G.

[A.A.C. R18-2-325]

XIX. GASOLINE STORAGE TANKS

A. Operating Limitations

1. Each gasoline storage tank shall be equipped with a submerged filling device or acceptable equivalent, for control of hydrocarbon emissions.

[A.A.C. R18-2-710.B]

2. All pumps and compressors that handle gasoline shall be equipped with mechanical seals or other equipment of equal efficiency to prevent release of organic contaminants into the atmosphere.

[A.A.C. R18-2-710.D]

B. Monitoring and Recordkeeping Requirements

1. The Permittee shall maintain a file, of the typical Reid vapor pressure of gasoline stored and of the dates of storage. Records of the dates on which any storage vessel is empty shall also be maintained.

[A.A.C. R18-2-710.E.1]

2. The Permittee shall record the average monthly temperature and true vapor pressure of gasoline at such temperature if the true vapor pressure is greater than 470 mm Hg (9.1 psia) and the gasoline is stored in a storage vessel other than one equipped with a vapor recovery system or its equivalent.

[A.A.C. R18-2-710.E.2.b]

3. The average monthly storage temperature shall be an arithmetic average calculated for each calendar month, or portion thereof, if storage is for less than a month, from bulk liquid storage temperatures determined at least once every seven days.
[A.A.C. R18-2-710.E.3]

4. The true vapor pressure shall be determined by the procedures in American Petroleum Institute Bulletin 2517, amended as of February 1980 (and no future editions), which is incorporated herein by reference and on file with the Office of the Secretary of State. This procedure is dependent upon determination of the storage temperature and the Reid vapor pressure, which requires sampling of the petroleum liquids in the storage vessels. Unless the Director requires in specific cases that the stored petroleum liquid be sampled, the true vapor pressure may be determined by using the average monthly storage temperature and the typical Reid vapor pressure. For those liquids for which certified specifications limiting the Reid vapor pressure exist, the Reid vapor pressure may be used. For other liquids, supporting analytical data must be made available upon request to the Director when typical Reid vapor pressure is used. [A.A.C. R18-2-710.E.4]

C. Permit Shield

Compliance with requirements of Condition XIX above shall be deemed compliance with A.A.C. R18-2-710.B, D, E.1, 2.b, 3, and 4.
[A.A.C. R18-2-325]

XX. INTERNAL COMBUSTION ENGINES (ICEs)

A. Requirements for Engines not Subject to New Source Performance Standards

1. Applicability

This Condition XX.A applies to the 64 HP Finlay Screen Engine and 200 HP Diesel fired Emergency Generator/Engine.

2. Fuel Limitations

The Permittee shall fire only diesel in the internal combustion engines.
[A.A.C. R18-2-306.A.2]

3. Particulate Matter and Opacity

a. Emissions Limitations and Standards

(1) The Permittee shall not cause, allow or permit the emission of particulate matter, caused by combustion of fuel, from any stationary rotating machinery into the atmosphere in excess of the amounts calculated by the following equation:
[A.A.C. R18-2-719.C.1]

$$E = 1.02Q^{0.769}$$

Where

E = the maximum allowable particulate emission rate in pounds-mass per hour

Q = the heat input in million Btu per hour

(2) The Permittee shall not cause, allow or permit to be emitted into the atmosphere from any stationary rotating machinery, smoke for any period greater than 10 consecutive seconds which exceeds 40% opacity. Visible emissions when starting cold equipment shall be exempt from this requirement for the first 10 minutes.

[A.A.C. R18-2-719.E]

b. Monitoring, Reporting, and Recordkeeping Requirements

(1) The Permittee shall conduct a monthly monitoring of visible emissions from the engines when in operation as per the periodic opacity monitoring requirements specified in Condition I.E of this Attachment.

[A.A.C. R18-2-306.A.3.c]

(2) The Permittee shall keep records of fuel supplier certifications or other documentation containing information regarding lower heating value of the fuel. These records shall be made available to ADEQ upon request.

[A.A.C. R18-2-306.A.3.c and -719.I]

c. Permit Shield

Compliance with requirements of Condition XIX.A.3 above shall be deemed compliance with A.A.C. R18-2-719.B, C.1, E, and I.

[A.A.C. R18-2-325]

4. Sulfur Dioxide

a. Emission Limitations and Standards

(1) The Permittee shall not emit or cause to emit more than 1.0 pound of sulfur dioxide per million Btu heat input.

[A.A.C. R18-2-719.F]

(2) The Permittee shall not burn high sulfur diesel fuel (sulfur content greater than 0.9 % by weight) in the engine.

[A.A.C. R18-2-719.H]

b. Monitoring, Recordkeeping, and Reporting Requirements

(1) The Permittee shall keep records of fuel supplier certifications or other documentation to demonstrate compliance with the sulfur content limit specified in Condition XX.A.4.a(2) above. The certification shall contain the sulfur content of the fuel. These records shall be made available to ADEQ upon request.

[A.A.C. R18-2-306.A.3.c and A.A.C. R18-2-719.I]

(2) The Permittee shall report to the Director any daily period during which the sulfur content of the fuel being fired in the engine exceeds 0.8%.

[A.A.C. R18-2-719.J]

c. Permit Shield

Compliance with requirements of Condition XIX.A.4 above shall be deemed compliance with A.A.C. R18-2-719.F, H, I, and J.

[A.A.C. R18-2-325]

5. Existing Engines Subject to National Emission Standards for Stationary Reciprocating Internal Combustion Engines (RICE) under 40 CFR 63, Subpart ZZZZ

a. General Operating Limitations/Requirements

(1) At all times, the Permittee shall operate and maintain the engines, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require the Permittee to make any further efforts to reduce emissions if levels required by this standard have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator and the Director which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.

[40 CFR 63.6605(b)]

(2) The Permittee shall operate and maintain the engines and after control device, if any, in accordance with manufacturer's emission-related written instructions or develop a maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions.

[40 CFR 63.6625(e)]

(3) The Permittee shall

(a) Change oil and filter every 1,000 hours of operation or annually, whichever comes first;

(b) Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first; and

(c) Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.

[40 CFR 63.6602-Table 2c Items 1 and 2]

(4) The Permittee has the option of utilizing an oil analysis program in order to extend the specified oil change requirements in Conditions XX.A.5.a(3)(a) above. The oil analysis shall be performed at the same frequency specified for changing the oil. The analysis program must at a minimum analyze total Base Number, viscosity; and percent water content. The condemning limits for these parameters are as follows:

[40 CFR §63.6625(i)]

(a) Total Base Number is less than 30 percent of the Total Base Number of the oil when new;

(b) Viscosity of the oil has changed by more than 20 percent from the viscosity of the oil when new; or

(c) Percent water content (by volume) is greater than 0.5.

If all of the above limits are not exceeded, the Permittee is not required to change the oil. If any of the limits are exceeded, the Permittee must change the oil within 2 days of receiving the results of the analysis, or before commencing operation, whichever is later. The analysis program shall be part of the maintenance plan for the engine.

(5) The Permittee shall minimize the engine's time at idle during startup and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes.

[40 CFR 63.6602-Table 2c, Item 1 and 63.6625(h)]

b. Compliance Demonstration

The Permittee shall demonstrate continuous compliance by operating and maintaining the engine according to the manufacturer's emission-related operation and maintenance instructions; or by developing and following own maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions.

[40 CFR 63.6640(a), 40 CFR 63 Subpart ZZZZ-Table 6, Item 9]

c. Reporting and Recordkeeping requirements

(1) The Permittee shall keep records of the following:

(a) Records of the maintenance conducted on the engines in order to demonstrate that the facility operated and maintained the engine and after-treatment control device (if any) according to the Permittee's own maintenance plan.

[40 CFR 63.6655(e)]

(b) Records of the parameters that are analyzed under the

optional oil analysis program in Conditions XX.A.5.a(4) above, the results of the analysis, the oil changes for the engine, and replacement of hoses and belts.

[40 CFR 63.6625(i)]

d. Permit Shield

Compliance with requirements of Condition XIX.A.5 above shall be deemed compliance with 40 CFR 63.6602, 6605(b), 6625(e), (i), (h), 6640(a), (b), and 6655(e).

[A.A.C. R18-2-325]

B. New and Reconstructed Engines Subject to New Source Performance Standards (NSPS) for Stationary Compression Ignition (CI) Internal Combustion Engines under 40 CFR 60, Subpart IIII

1. Applicability

This Condition XX.B applies to new and reconstructed (CI) internal combustion engines (ICE) identified in Attachment "G" as subject to NSPS Subpart IIII.

2. Operating Requirements for CI Engines

a. The Permittee shall

[40 CFR 60.4211(a)]

(1) Operate each engine and control device according to manufacturer's emission-related written instructions;

(2) Change only those emissions related settings that are permitted by the manufacturer; and

(3) Meet the requirements in 40 CFR 89, 94 and/or 1068, as applicable.

b. If any stationary CI internal combustion engine equipped with a diesel particulate filter to comply with the emission standards in 40 CFR 60.4204, the diesel particulate filter shall be installed with a backpressure monitor that notifies the Permittee when the high backpressure limit of the engine is approached.

[40 CFR 60.4209(b)]

3. Additional Operating Requirements for Emergency CI Engines

a. *The Permittee shall install a non-resettable hour meter prior to startup of the engine*.

[40 CFR 60.4209(a), A.A.C. R18-2-306.A.3, and -331.A.3.c]
[Material Permit Conditions are indicated by underline and italics]

b. An emergency ICE shall be limited to emergency situations and required testing and maintenance only such as to produce power for critical

networks or equipment (including power supplied to portions of a facility) when electric power from the local utility (or the normal power source, if the facility runs on its own power production) is interrupted, or used to pump water in the case of fire or flood, etc. Stationary CI ICE used to supply power to an electric grid or that supply power as part of a financial arrangement with another entity shall not be considered to be emergency engines.

[40 CFR 60.4219]

c. The Permittee shall operate the emergency stationary ICE according to the requirements in Conditions XX.B.3.c(1) through (3) below. In order for the engine to be considered an emergency stationary ICE under, any operation other than emergency operation, maintenance response, and operation in non-emergency situations for 50 hours per year, as described in Conditions XX.B.3.c(1) through (3) below, is prohibited. If the emergency stationary ICE is not operated in accordance with the requirements in Conditions XX.B.3.c(1) through (3) below, the engine will not be considered an emergency engine and must meet all requirements for non-emergency engines.

[40 CFR 60.4211(f)]

(1) There is no time limit on the use of emergency stationary ICE in emergency situations.

[40 CFR 60.4211(f)(1)]

(2) The Permittee may operate the emergency stationary ICE for any combination of the purposes specified in Conditions XX.B.3.c(2)(a) below for a maximum of 100 hours per calendar year. Any operation for non-emergency situations as allowed by Condition XX.B.3.c(3) below counts as part of the 100 hours per calendar year.

[40 CFR 60.4211(f)(2)]

(a) Emergency stationary ICE may be operated for maintenance checks and readiness testing, provided that the tests are recommended by federal, state, or local government, the manufacturer, the vendor, the regional transmission operator, or the insurance company associated with the engine. The Permittee may petition the Administrator or Director for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the Permittee maintains records indicating that federal, state, or local standards require maintenance and testing of emergency ICE beyond the 100 hours per year.

[40 CFR 60.4211(f)(2)(i)]

(b) The Permittee may petition the Administrator or Director for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the Permittee maintains records indicating that federal, state, or local standards require

maintenance and testing of emergency ICE beyond the 100 hours per year.

[40 CFR 60.4211(f)(2)(i)]

(3) The Permittee may operate the emergency stationary ICE for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing provided in Condition XX.B.3.c(2) above. Except as provided in Condition XX.B.3.c(3)(a) below, the 50 hours per calendar year for non-emergency situations cannot be used for peak shaving and or to generate income for a facility to an electric grid or otherwise supply power as part of a financial arrangement with another entity.

[40 CFR 60.4211(f)(3)]

(a) The 50 hours per year for non-emergency situations can be used to supply power as part of a financial arrangement with another entity of all of the following conditions are met:

[40 CFR 60.4211(f)(3)(i)]

(i) The engine is dispatched by the local balancing authority or local transmission and distribution system operator.

(ii) The dispatch is intended to mitigate local transmission and/or distribution limitations so as to avert potential voltage collapse or line overloads that could lead to the interruption of power supply in a local area or region.

(iii) The dispatch follows reliability emergency operation or similar protocols that follow specific NERC regional, state, public utility commission, or local standards or guidelines.

(iv) The power is provided only to the facility or to support the local transmission and distribution system.

(v) The Permittee identifies and records the entity that dispatches the engine and the specific NERC, regional, state public utility commission or local standards or guidelines that are being followed for dispatching the engine. The local balancing authority or local transmission and distribution system operator may keep these records on behalf of the Permittee.

4. Fuel Requirements

a. For CI ICE with a displacement of less than 30 liters per cylinder that use diesel fuel, the Permittee shall use diesel fuel that meets the following requirements for non-road diesel fuel.

[40 CFR 60.4207(b) and 80.510(b)]

(1) Sulfur content - 15 ppm maximum

(2) Cetane index or aromatic content, as follows:

(a) A minimum cetane index of 40; or

(b) A maximum aromatic content of 35 volume percent

b. For CI ICE with a displacement of greater than or equal 30 liters per cylinder, the Permittee must use fuel that meets a maximum per-gallon sulfur content of 1,000 parts per million (ppm).

[40 CFR 60.4207(d)]

5. Emission Limitations and Standards

a. The Permittee operating a new or modified or reconstructed non-emergency CI ICE shall comply with the emission standards listed in the corresponding applicable regulations for the same model year and cylinder displacement as stated in 40 CFR 60.4204(a) through (e).

[40 CFR 60.4204]

b. The Permittee operating a new or modified or reconstructed emergency CI ICE shall comply with the emission standards listed in the corresponding applicable regulations for the same model year and cylinder displacement as stated in 40 CFR 60.4205(a) through (f).

[40 CFR 60.4205]

6. Compliance Requirements

a. Pre-2007 Model Year Engines

[40 CFR 60.4211(b)]

The Permittee operating a pre-2007 model year stationary CI ICE or a CI fire pump manufactured prior to the model years in Table 3 of 40 CFR Part 60 Subpart IIII, shall demonstrate compliance according to one of the following methods:

(1) Purchasing an engine certified according to 40 CFR Part 89 or 40 CFR Part 94, as applicable, for the same model year and maximum engine power. The engine must be installed and configured according to the manufacturer's specifications.

(2) Keeping records of performance test results for each pollutant for a test conducted on a similar engine. The test must have been conducted using the same methods specified in this subpart and these methods must have been followed correctly.

(3) Keeping records of engine manufacturer data indicating

compliance with the standards

(4) Keeping records of control device vendor data indicating compliance with the standards

(5) Conducting an initial performance test to demonstrate compliance with the emission standards according to the requirements specified in 40 CFR 60.4212, as applicable.

b. 2007 and later Year Stationary CI ICE

The Permittee operating a 2007 model year and later stationary CI ICE or a CI fire pump engine that is manufactured during or after the model year that applies to your fire pump engine power rating in Table 3 of 40 CFR Part 60, Subpart IIII, shall comply by purchasing an engine certified to the emission standards in §60.4205(b) or (c), as applicable, for the same model year and maximum (or in the case of fire pumps, NFPA nameplate) engine power. The engine must be installed and configured according to the manufacturer's specifications, except as permitted in Condition XX.B.6.d below. [40 CFR 60.4211(c)]

c. Modified or Reconstructed Stationary ICE

The Permittee operating a modified or reconstructed stationary CI ICE shall demonstrate compliance with the applicable standards using one of the following methods:

[40 CFR 60.4205(e) and 4211(e)]

(1) Purchasing an engine certified to the emission standards in 60.4205(f).

(2) Conducting a performance test to demonstrate initial compliance with the emission standards according to the requirements specified in 40 CFR 60.4212. The test shall be conducted within 60 days after the engine commences operation after the modification or reconstruction. The in-use performance tests shall meet the NTE standards as indicated in 40 CFR 60.4212.

d. If the Permittee does not install, configure, operate, and maintain the CI ICE and control device according to the manufacturer's emission-related written instructions, or change the emission-related setting in a way that is not permitted by the manufacturer, the Permittee shall demonstrate compliance as following:

[40 CFR 60.4211(g)]

(1) CI ICE less than 100 HP

The Permittee shall keep a maintenance plan and records of conducted maintenance to demonstrate compliance and shall, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. In addition, the Permittee shall conduct an initial

performance test to demonstrate compliance with the applicable emission standards within 1 year of such action.

(2) CI ICE greater than or equal to 100 HP and less than or equal to 500 HP

The Permittee shall keep a maintenance plan and records of conducted maintenance and shall, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. In addition, the Permittee shall conduct an initial performance test to demonstrate compliance with the applicable emission standards within 1 year of startup, or within 1 year after an engine and control device is no longer installed, configured, operated, and maintained in accordance with the manufacturer's emission-related written instructions, or within 1 year after the Permittee changed emission-related settings in a way that is not permitted by the manufacturer

(3) CI ICE greater than 500 HP

The Permittee shall keep a maintenance plan and records of conducted maintenance and shall, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. In addition, the Permittee shall conduct an initial performance test to demonstrate compliance with the applicable emission standards within 1 year of startup, or within 1 year after an engine and control device is no longer installed, configured, operated, and maintained in accordance with the manufacturer's emission-related written instructions, or within 1 year after you change emission-related settings in a way that is not permitted by the manufacturer. The Permittee shall conduct subsequent performance testing every 8,760 hours of engine operation or 3 years, whichever comes first, thereafter to demonstrate compliance with the applicable emission standards.

7. Notification Requirements

a. For the non-emergency stationary CI ICE that are greater than 2,237 KW (3,000 HP), or have a displacement of greater than or equal to 10 liters per cylinder, or are pre-2007 model year engines that are greater than 130 KW (175 HP) and not certified, the Permittee shall meet the requirements of Condition XX.B.7.a(1) and (2) below:

[40 CFR 60.4214(a)]

(1) Submit an initial notification as required in 40 CFR 60.7(a)(1). The notification shall include the following information:

[40 CFR 60.4214(a)(1)]

(a) Name and address of the Permittee;

(b) The address of the affected source;

(c) Engine information including make, model, engine family, serial number, model year, maximum engine power, and engine displacement;

(d) Emission control equipment; and

(e) Fuel used.

(2) Keep records of the following information.

[40 CFR 60.4214(a)(2)]

(a) All notifications submitted to comply with this subpart and all documentation supporting any notification.

(b) Maintenance conducted on the engine

(c) If the stationary CI internal combustion is a certified engine, documentation from the manufacturer that the engine is certified to meet the emission standards

(d) If the stationary CI internal combustion is not a certified engine, documentation that the engine meets the emission standards

b. If the stationary CI internal combustion engine is an emergency stationary internal combustion engine, the Permittee is not required to submit an initial notification.

[40 CFR 60.4214(b)]

8. Recordkeeping and Reporting Requirements

a. Starting with model years in Table 5 of 40 CFR 60 Subpart IIII, the Permittee operating an emergency ICE that does not meet the standards applicable to non-emergency engines in the applicable model year, shall keep records of the operation of the engine in emergency and non-emergency service that are recorded through the non-resettable hour meter. The Permittee shall record the time of operation of the engine and the reason the engine was in operation during that time.

[40 CFR 60.4214(b)]

b. If the stationary CI internal combustion engine is equipped with a diesel particulate filter, the Permittee shall keep records of any corrective action taken after the backpressure monitor has notified the Permittee that the high backpressure limit of the engine is approached.

[40 CFR 60.4214(c)]

c. The Permittee operating an emergency stationary CI ICE with a maximum engine power more than 100 HP that operates or is contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in Condition XX.B.3.c(3)(a) above, shall submit an annual report

according to the requirements in Conditions XX.B.8.c(1) through (3) below:

[40 CFR 60.4214(d)]

(1) The report shall contain the following information.

(a) Company name and address where the engine is located;

(b) Date of the report and beginning and ending dates of the reporting period;

(c) Engine site rating and model year;

(d) Latitude and longitude of the engine in decimal degrees reported to the fifth decimal place;

(e) Hours operated for the purposes specified in Conditions XX.B.3.c(2)(a) and (b) including the date, start time, and end time for engine operation for the purposes specified in Conditions XX.B.3.c(2)(a) and (b);

(f) Number of hours the engine is contractually obligated to be available for the purposes specified in Conditions XX.B.3.c(2)(a)and (b); and

(g) Hours spent for operation for the purposes specified in Condition XX.B.3.c(2)(a), including the date, start time, and end time for engine operation for the purposes specified in Condition XX.B.3.c(2)(a). The report must also identify the entity that dispatched the engine and the situation that necessitated the dispatch of the engine.

(2) Annual reports for each calendar year shall be submitted no later than March 31st of the following calendar year.

(3) The annual report shall be submitted electronically using the 40 CFR 60 Subpart IIII specific reporting form in the Compliance and Emissions Data Reporting Interface (CEDRI) that is accessed through EPA's Central Data Exchange (CDX) (www.epa.gov/cdx). However, if the reporting form specific to this subpart is not available in CEDRI at the time that the report is due, the written report must be submitted to the Administrator at the appropriate address listed in 40 CFR 60.4.

9. Permit Shield

Compliance with requirements of Condition XX.B above shall be deemed compliance with 40 CFR 60.4204, 4205, 4207(b), (d), 4209, 4211(a), (b), (c), (e), (f), and (g), 4214, 4219, and 80.510(b).

[A.A.C. R18-2-325]

C. New Emergency Engines Subject to New Source Performance Standards (NSPS) for

Stationary Spark Ignition (SI) Internal Combustion Engines under 40 CFR 60, Subpart JJJJ

1. Applicability

   This Condition XX.C applies to each new emergency SI internal combustion engine (ICE) identified in Equipment List, Attachment "G" as subject to NSPS Subpart JJJJ.

2. Operating Requirements

   a. *The Permittee shall install a non-resettable hour meter prior to start-up of the engine.*

   [A.A.C. R18-2-306.A.3, -331.A.3.c, and 40 CFR 60.4237(b)]
   [Material Permit Conditions are indicated by underline and italics]

   b. The Permittee is prohibited from operating the emergency SI ICE for any operation other than emergency operation, maintenance and testing, and operation in non-emergency situations for 50 hours per year.

   [40 CFR 60.4243(d)]

   c. The Permittee shall operate the stationary emergency SI ICE according to the requirements in Conditions XX.C.2.c(1) through (3) below:

   [40 CFR 60.4243(d)]

      (1) There is no time limit on the use of emergency stationary SI ICE in emergency situations.

      [40 CFR 60.4243(d)(1)]

      (2) The Permittee may operate the stationary emergency SI ICE for any combination of the purposes specified in Conditions XX.C.2.c(2)(a) through (b) below for a maximum of 100 hours per calendar year. Any operation for non-emergency situations as allowed by Condition XX.C.2.c(3) below counts as part of the 100 hours per calendar year. [40 CFR 60.4243(d)(2)]

         (a) Emergency stationary SI ICE may be operated for maintenance checks and readiness testing, provided that the tests are recommended by federal, state, or local government, the manufacturer, the vendor, the regional transmission operator, or the insurance company associated with the engine.

         [40 CFR 60.4243(d)(2)(i)]

         (b) The Permittee may petition the Administrator or Director for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the Permittee maintains records indicating that federal, state, or local standards require maintenance and testing of emergency SI ICE beyond the 100 hours per calendar year.

         [40 CFR 60.4243(d)(2)(i)]

      (3) The Permittee may operate the emergency stationary SI ICE for

up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing provided in Condition XX.C.2.c(2) above. Except as provided in Condition XX.C.2.c(3)(a) below, the 50 hours per calendar year for non-emergency situations cannot be used for peak shaving to generate income for a facility to an electric grid, or otherwise supply power as part of a financial arrangement with another entity.

[40 CFR 60.4243(d)(3)]

(a) The 50 hours per year for non-emergency situations can be used to supply power as part of a financial arrangement with another entity if all of the following conditions are met:

[40 CFR 60.4243(d)(3)(i)]

(i) The engine is dispatched by the local balancing authority or local transmission and distribution system operator.

[40 CFR 60.4243(d)(3)(i)(A)]

(ii) The dispatch is intended to mitigate local transmission and/or distribution limitations so as to avert potential voltage collapse or line overloads that could lead to the interruption of power supply in a local area or region.

[40 CFR 60.4243(d)(3)(i)(B)]

(iii) The dispatch follows reliability emergency operation or similar protocols that follow specific NERC, regional, state, public utility commission, or local standards or guidelines.

[40 CFR 60.4243(d)(3)(i)(C)]

(iv) The power is provided only to the facility itself or to support the local transmission and distribution system.

[40 CFR 60.4243(d)(3)(i)(D)]

(v) The Permittee identifies and records the entity that dispatches the engine and the specific NERC, regional, state, public utility commission or local standards or guidelines that are being followed for dispatching the engine. The local balancing authority or local transmission and distribution system operator may keep these records on behalf of the Permittee.

[40 CFR 60.4243(d)(3)(i)(E)]

d. The Permittee operating an emergency stationary natural gas fired SI ICE may operate the engine using propane for a maximum of 100 hours per year as an alternative fuel solely during emergency operations, but must

keep records of such use. If propane is used for more than 100 hours per year in an engine that is not certified to the emission standards when using propane, the Permittee shall conduct a performance test to demonstrate compliance with the emission standards of 40 CFR 60.4233.

[40 CFR 60.4243(e)]

e. The Permittee shall use air-to-fuel ratio controllers when operating a three-way catalysts/non-selective catalytic reduction. The air-to-fuel ratio controller shall be maintained and operated appropriately in order to ensure proper operation of the engine and control device to minimize emissions at all times.

[40 CFR 60.4243(g)]

3. Emission Standards

The Permittee shall comply with the following emission standards:

[40 CFR 60.4233]

a. Nitrogen Oxides (NO_x)

The Permittee shall limit the emissions of NO_x from the SI ICE to 2.0 grams per horsepower hour (g/hp-hr) or 160 parts per million volume dry (ppmvd) at 15 % O_2.

b. Carbon Monoxide (CO)

The Permittee shall limit the emissions of CO from the SI ICE to 4.0 g/hp-hr or 540 ppmvd at 15% O_2.

c. Volatile Organic Compounds (VOCs)

The Permittee shall limit the emissions of VOCs from the SI ICE to 1.0 g/hp-hr or 86 ppmvd at 15% O_2.

[40 CFR 60.4233, Table 1]

d. The Permittee shall operate and maintain the stationary emergency SI ICE such that it complies with the emission standards listed in ConditionsXX.C.3.a to c above over the entire life of the engine.

[40 CFR 60.4234]

4. Compliance Requirements

The Permittee shall demonstrate compliance with the emission limitations in Condition XX.C.3 above by:

[40 CFR 60.4243(b)(1)]

a. Utilizing a engine certified to the appropriate standards, and

b. Operating and maintaining the engine and any control devices according to the manufacturer's emission-related written instructions.

5. Recordkeeping and Reporting Requirements

a. The Permittee shall retain records of all notifications submitted to comply with NSPS Subpart JJJJ and all documentation supporting any notification.

[40 CFR 60.4245(a)(1)]

b. The Permittee shall maintain records of any maintenance conducted on the engine.

[40 CFR 60.4245(a)(2)]

c. The Permittee shall maintain the documentation from the manufacturer that that the ICE is certified to meet the emission standards in this Condition.

[40 CFR 60.4245(a)(3)]

d. If the stationary SI ICE is not a certified engine or is a certified engine operating in a non-certified manner and subject to §60.4243(a)(2), documentation that the engine meets the emission standards.

[40 CFR 60.4245(a)(4)]

e. The Permittee shall keep records of the hours of operation of the engine that is recorded through the non-resettable hour meter. The Permittee shall document how many hours are spent for emergency operation; including what classified the operation as emergency and how many hours are spent for non-emergency operation.

[40 CFR 60.4245(b)]

6. Permit Shield

Compliance with requirements of Condition XX.C above shall be deemed compliance with 40 CFR 60.4230(a)(4), 4233, 4234, 4237(b), 4243(b)(i), (d), (e) , (g), 4245(a)(i)(4), and (b).

[A.A.C. R18-2-325]

D. New or Reconstructed Engines Subject to National Emission Standards for Hazardous Air Pollutants (NESHAP) for Stationary Reciprocating Internal Combustion Engines (RICE) under 40 CFR 60, Subpart ZZZZ

1. New or reconstructed CI stationary RICE and new or reconstructed SI stationary emergency RICE with a site rating of less than or equal to 500 brake HP shall meet the requirements of NESHAP Subpart ZZZZ by complying with the requirements in Conditions XX.B and C above as applicable.

[40 CFR 63.6590(c)(6) and (7

2. New or reconstructed CI stationary RICE with a site rating of more than 500 brake HP shall comply with the initial notification requirements of 40 CFR 63.6645(f).

[40 CFR 63.6590(b)(1)(i)]

XXI. COOLING TOWERS

A. General Operational Requirements

1. The Permittee shall not emit gaseous or odorous materials from equipment, operations, or premises in such quantities or concentrations so as to cause air

pollution.

[A.A.C. R18-2-730.D]

2. Where a stack, vent, or other outlet is at such a level that fumes, gas mist, odor, smoke, vapor or any combination thereof constituting air pollution is discharged to adjoining property, the Director may require the installation of abatement equipment or the alteration of such stack, vent, or other outlet by the Permittee thereof to a degree that will adequately dilute, reduce, or eliminate the discharge of air pollution to adjoining property.

[A.A.C.R18-2-730.G]

B. Particulate Matter and Opacity

1. Emission Limitations/Standards

a. The Permittee shall not cause or permit the emissions of particulate matter discharged into the atmosphere in any one hour from cooling towers in total quantities in excess of the amounts calculated by one of the following equations:

(1) For process sources having a process weight rate of 60,000 pounds per hour (30 tons per hour) or less, the maximum allowable emissions shall be determined by the following equation:

[A.A.C. R18-2-730.A.1.a]

$E = 4.10P^{0.67}$

Where:

E = the maximum allowable particulate emissions rate in pounds-mass per hour.

P = the process weight rate in tons-mass per hour.

(2) For process weight rate greater than 60,000 pounds per hour (30 tons per hour), the maximum allowable emissions shall be determined by the following equation:

[A.A.C. R18-2-730.A.1.b]

$E = 55.0P^{0.11} - 40$

Where "E" and "P" are defined as indicated in Condition XXI.B.1.a(1) above.

b. The Permittee shall not cause or allow to be discharged into the atmosphere any plume or effluent from the cooling towers which exhibits opacity greater than 20%, measured in accordance with EPA Reference Method 9. Where the presence of uncombined water is the only reason for the exceedance of this opacity standard, such exceedance shall not constitute a violation.

[A.A.C. R18-2-702.B.3 and -702.C]

2. Air Pollution Control Requirements

At all times, including periods of startup, shutdown, and malfunction, the Permittee shall, to the extent practicable, maintain and operate the cooling towers in a manner consistent with good air pollution control practice for minimizing particulate matter emissions.

[A.A.C. R18-2-306.A.2]

3. Monitoring, Record keeping and Reporting Requirements

A certified Method 9 observer shall conduct a quarterly (once in 3 months) visual survey of visible emissions from cooling towers as per the procedure in Condition I.E of this Attachment.

[A.A.C. R18-2-306.A.3.c]

C. Permit Shield

Compliance with requirements of Condition XXI above shall be deemed compliance with A.A.C.R18-2-702.B.3, C, -730.A.1, D, and G.

[A.A.C. R18-2-325]

XXII. ON-SITE CONTRACTOR CRUSHING AND SCREENING OPERATIONS

A. Affected Facilities Subject to Standards of Performance for Existing Nonferrous Metals Industry Sources

1. Applicability

This Condition XXII.A applies to on-site contractor owned or operated affected facilities listed in Equipment List, Attachment "F" as subject to A.A.C. R18-2-721

2. Particulate Matter and Opacity

a. Emission Limitations/Standards

(1) The Permittee shall not cause or permit the emissions of particulate matter discharged into the atmosphere in any one hour from any process source subject to this Condition XXII.A in total quantities in excess of the amounts calculated by one of the following equations:

(a) For process sources having a process weight rate of 60,000 pounds per hour (30 tons per hour) or less, the maximum allowable emissions shall be determined by the following equation:

[A.A.C. R18-2-721.B.1]

$E = 4.10P^{0.67}$

Where:

E = the maximum allowable particulate emissions rate in pounds-mass per hour.

P = the process weight rate in tons-mass per hour.

(b) For process weight rate greater than 60,000 pounds per hour (30 tons per hour), the maximum allowable emissions shall be determined by the following equation:
[A.A.C. R18-2-721.B.2]

$E = 55.0P^{0.11} - 40$

Where "E" and "P" are defined as indicated in Condition XXII.A.2.a(1)(a) above.

(c) The Permittee shall not cause or allow to be discharged into the atmosphere any plume or effluent from the affected facility which exhibits opacity greater than 20%, measured in accordance with EPA Reference Method 9. Where the presence of uncombined water is the only reason for the exceedance of this opacity standard, such exceedance shall not constitute a violation.
[A.A.C. R18-2-702.B.3 and -702.C]

(d) For purposes of this Condition XXII.A.2.a above, the total process weight from all similar units employing a similar type process shall be used in determining the maximum allowable emission of particulate matter.
[A.A.C. R18-2-721.D]

b. Air Pollution Control Requirements

The Permittee shall operate water spray bars or equivalent control equipment whenever the crushers and screen are operating or material must be adequately wet to minimize visible emissions to the extent practical.

[A.A.C. R18-2-331.A.3.d & e, and -306.A.2]
[Material permit conditions are indicated by underline and italics]

c. Monitoring, Reporting and Recordkeeping Requirements

The Permittee shall conduct a bi-weekly (once in every two weeks) monitoring of visible emissions from the stacks and fugitive dust sources as per the periodic opacity monitoring requirements specified in Condition I.E of this Attachment.
[A.A.C. R18-2-306.A.3.c]

d. Permit Shield
[A.A.C. R18-2-325]

Compliance with requirements of Conditions XXII.A above shall be deemed compliance with the requirements of A.A.C. R-18-2-702.B.3, C,

-721.B, D, and F.

B. Affected Facilities Subject to New Source Performance Standards (NSPS) for Nonmetallic Mineral Processing Plants under 40 CFR 60, Subpart OOO

1. Applicability

This Condition XXII.B applies to on-site contractor owned or operated affected facilities listed in Equipment List, Attachment "F" as subject to NSPS Subpart OOO.

2. Particulate Matter and Opacity

a. Emission Limitations and Air Pollution Control

(1) *The Permittee shall not allow to be discharged into the atmosphere from any affected facility which commenced construction, modification, or reconstruction after August 31, 1983, but before April 22, 2008, at which a capture system is not used, any fugitive emissions which exhibit visible emissions greater than 15 percent opacity.*

[40 CFR 60.672(b), Table 3 to 40 CFR 60, Subpart OOO, and A.A.C. R18-2-331.A.3.f]
[Material permit conditions are indicated by underline and italics]

(2) *The Permittee shall operate water spray bars or equivalent control equipment whenever the crushers and screens are operating, or material shall be adequately wet to minimize visible emissions to the extent practical.*

[A.A.C. R18-2-306.A.2, -331.A.3.d, and e]
[Material permit conditions are indicated by underline and italics]

b. Monitoring, Reporting, and Recordkeeping Requirements

(1) For affected facilities subject to the opacity standard in Condition XXII.B.2.a(1) above, the Permittee shall conduct monthly opacity monitoring in accordance with Condition I.E of this Attachment when those affected facilities are in operation.

[A.A.C. R18-2-306.A.3.c]

(2) The Permittee shall submit written reports of the results of all performance tests conducted to demonstrate compliance with the standards set forth in Condition XXII.B.2.a(1) above, including reports of opacity observations made using Method 9.

[40 CFR 60.676(f)]

c. Testing Requirements

(1) Initial Compliance

Unless the initial test has been conducted previously, the Permittee shall demonstrate initial compliance with the applicable opacity limits for fugitive emissions contained in Condition XXII.B.2.a(1) above by conducting initial performance tests

according to 40 CFR 60.11 and the test methods and procedures of ConditionXXII.B.2.c(2) below.

[Table 3 to 40 CFR 60 Subpart OOO]

(2) When conducting an initial performance test required by Condition XXII.B.2.c(1) above, the Permittee shall determine compliance with the opacity standard in Conditions XXII.B.2.a(1) above by using Method 9 and the procedures in 40 CFR 60.11, with the following additions:

[40 CFR 60.675(b) and (c)(1)]

(a) The minimum distance between the observer and the emission source shall be 4.57 meters (15 feet).

(b) The observer shall, when possible, select a position that minimizes interference from other fugitive emission sources (e.g., road dust). The required observer position relative to the sun (Method 9 of Appendix A–4 of 40 CFR 60, Section 2.1) must be followed.

(c) For affected facilities using wet dust suppression for particulate matter control, a visible mist is sometimes generated by the spray. The water mist must not be confused with particulate matter emissions and is not to be considered a visible emission. When a water mist of this nature is present, the observation of emissions is to be made at a point in the plume where the mist is no longer visible.

(3) When conducting an initial performance test required by Condition XXII.B.2.c(1) above and determining compliance with the fugitive emissions standards for any affected facility under Condition XXII.A.2.a(1) above, the duration of the Method 9 observations shall be 30 minutes (five 6-minute averages). Compliance with the applicable fugitive emission limits shall be based on the average of the five 6-minute averages.

[40 CFR 60.675(c)(3)]

(4) For performance tests involving only Method 9 testing, the Permittee may reduce the 30-day advance notification of performance test in 40 CFR 60.7(a.6) and 60.8(d) to a 7-day advance notification.

[40 CFR 60.675(g)]

(5) If the initial performance test date for an affected facility falls during a seasonal shut down (as defined in 40 CFR 60.671) of the affected facility, then with approval from the Director, the Permittee may postpone the initial performance test until no later than 60 calendar days after resuming operation of the affected facility.

[40 CFR 60.675(i)

d. Permit Shield

Compliance with requirements of Condition XXII.B above shall be deemed compliance with 40 CFR 60.672(b), 674(b), (b)(1)(i), (b)(2), 675(b), (c)(1), (c)(3), (g), (i), and 676(b)(i), (b)(1)(i), (b)(i)(ii), (f).

[A.A.C.R18-2-325]

XXIII. FUGITIVE DUST REQUIREMENTS

A. Applicability

This Condition applies to any non-point source of fugitive dust at the facility.

B. Particulate Matter and Opacity

Open Areas, Roadways & Streets, Storage Piles, and Material Handling

1. Emission Limitations/Standards

a. Opacity of emissions from any fugitive dust non-point source shall not be greater than 40%.

[A.A.C. R18-2-614]

b. The Permittee shall employ the following reasonable precautions to prevent excessive amounts of particulate matter from becoming airborne:

(1) Keep dust and other types of air contaminants to a minimum in an open area where construction operations, repair operations, demolition activities, clearing operations, leveling operations, or any earth moving or excavating activities are taking place, by good modern practices such as using an approved dust suppressant or adhesive soil stabilizer, paving, covering, landscaping, continuous wetting, detouring, barring access, or other acceptable means;

[A.A.C. R18-2-604.A]

(2) Keep dust to a minimum from driveways, parking areas, and vacant lots where motor vehicular activity occurs by using an approved dust suppressant, or adhesive soil stabilizer, or by paving, or by barring access to the property, or by other acceptable means;

[A.A.C. R18-2-604.B]

(3) Keep dust and other particulates to a minimum by employing dust suppressants, temporary paving, detouring, wetting down or by other reasonable means when a roadway is repaired, constructed, or reconstructed;

[A.A.C. R18-2-605.A]

(4) Take reasonable precautions, such as wetting, applying dust suppressants, or covering the load when transporting material likely to give rise to airborne dust;

[A.A.C. R18-2-605.B]

(5) Take reasonable precautions, such as the use of spray bars, wetting agents, dust suppressants, covering the load, and hoods when crushing, handling, or conveying material likely to give rise to airborne dust;

[A.A.C. R18-2-606]

(6) Take reasonable precautions such as chemical stabilization, wetting, or covering when organic or inorganic dust producing material is being stacked, piled, or otherwise stored;

[A.A.C. R18-2-607.A]

(7) Operate stacking and reclaiming machinery utilized at storage piles at all times with a minimum fall of material, or with the use of spray bars and wetting agents;

[A.A.C. R18-2-607.B]

(8) Any other method as proposed by the Permittee and approved by the Director.

[A.A.C. R18-2-306.A.3.c]

2. Air Pollution Control Requirements

Haul Roads and Storage Piles

Water, or an equivalent control measure, shall be used to control visible emissions from haul roads and storage piles.

[A.A.C. R18-2-306.A.2

3. Monitoring and Recordkeeping Requirements

a. The Permittee shall maintain records of the dates on which any of the activities listed in Conditions XXIII.B.1.b above were performed and the control measures that were adopted.

[A.A.C. R18-2-306.A.3.c]

b. Opacity Monitoring Requirements

Each month, the Permittee shall monitor visible emissions from fugitive sources in accordance with Condition I.E of this Attachment.

[A.A.C. R18-2-306.A.3.c]

4. Permit Shield

Compliance with requirements of Condition XXIII above shall be deemed compliance with A.A.C. R18-2-604. -605, -606, 607, -608 and -614.

[A.A.C. R18-2-325]

XXIV. MOBILE SOURCE REQUIREMENTS

A. Applicability

The requirements of this Condition apply to mobile sources which either move while emitting air contaminants or are frequently moved during the course of their utilization but are not classified as motor vehicles, agricultural vehicles, or agricultural equipment used in normal farm operations. Mobile sources shall not include portable sources as defined in A.A.C. R18-2-101.109.

[A.A.C. R18-2-801.A]

B. Particulate Matter and Opacity

1. Emission Limitations/Standards

a. Off-Road Machinery

The Permittee shall not cause, allow, or permit to be emitted into the atmosphere from any off-road machinery, smoke for any period greater than ten consecutive seconds, the opacity of which exceeds 40%. Visible emissions when starting cold equipment shall be exempt from this requirement for the first ten minutes. Off-road machinery shall include trucks, graders, scrapers, rollers, and other construction and mining machinery not normally driven on a completed public roadway.

[A.A.C. R18-2-802.A and B]

b. Roadway and Site Cleaning Machinery

(1) The Permittee shall not cause, allow or permit to be emitted into the atmosphere from any roadway and site cleaning machinery smoke or dust for any period greater than ten consecutive seconds, the opacity of which exceeds 40%. Visible emissions when starting cold equipment shall be exempt from this requirement for the first ten minutes.

[A.A.C. R18-2-804.A]

(2) The Permittee shall take reasonable precautions, such as the use of dust suppressants, before the cleaning of a site, roadway, or alley. Earth or other material shall be removed from paved streets onto which earth or other material has been transported by trucking or earth moving equipment, erosion by water or by other means.

[A.A.C. R18-2-804.B]

c. Unless otherwise specified, no mobile source shall emit smoke or dust the opacity of which exceeds 40%.

[A.A.C. R18-2-801.B]

2. Recordkeeping Requirement

The Permittee shall keep a record of all emissions related maintenance activities performed on the Permittee's mobile sources stationed at the facility as per manufacturer's specifications.

[A.A.C. R18-2-306.A.5.a]

3. Permit Shield

Compliance with requirements of Condition XXIV above shall be deemed compliance with A.A.C. R18-2-801, -802, and -804.

[A.A.C. R18-2-325]

XXV. OTHER PERIODIC ACTIVITIES

A. Abrasive Blasting

1. Particulate Matter and Opacity

a. Emission Limitations/Standards

The Permittee shall not cause or allow sandblasting or other abrasive blasting without minimizing dust emissions to the atmosphere through the use of good modern practices. Good modern practices include:

(1) Wet blasting;

(2) Effective enclosures with necessary dust collecting equipment; or

(3) Any other method approved by the Director.

[A.A.C. R18-2-726]

b. Opacity

The Permittee shall not cause, allow or permit visible emissions from sandblasting or other abrasive blasting operations in excess of 20% opacity.

[A.A.C. R18-2-702.B.3]

2. Monitoring and Recordkeeping Requirement

Each time an abrasive blasting project is conducted, the Permittee shall make a record of the following:

a. The date the project was conducted;

b. The duration of the project; and

c. Type of control measures employed.

[A.A.C. R18-2-306.A.3.c]

3. Permit Shield

Compliance with requirements of Condition XXV.A above shall be deemed compliance with A.A.C. R18-2-702.B.3 and -726.

[A.A.C.R18-2-325]

B. Use of Paints

1. Volatile Organic Compounds

a. Emission Limitations/Standards

While performing spray painting operations, the Permittee shall comply with the following requirements:

(1) The Permittee shall not conduct or cause to be conducted any spray painting operation without minimizing organic solvent emissions. Such operations, other than architectural coating and spot painting, shall be conducted in an enclosed area equipped with controls containing no less than 96 percent of the overspray.
[A.A.C.R18-2-727.A]

(2) The Permittee or their designated contractor shall not either:

(a) Employ, apply, evaporate, or dry any architectural coating containing photochemically reactive solvents for industrial or commercial purposes; or

(b) Thin or dilute any architectural coating with a photochemically reactive solvent.
[A.A.C.R18-2-727.B]

(3) For the purposes of Condition XXV.B.1.a(2) above, a photochemically reactive solvent shall be any solvent with an aggregate of more than 20 percent of its total volume composed of the chemical compounds classified in Conditions XXV.B.1.a(3), or which exceeds any of the following percentage composition limitations, referred to the total volume of solvent:

(a) A combination of the following types of compounds having an olefinic or cyclo-olefinic type of unsaturation-hydrocarbons, alcohols, aldehydes, esters, ethers, or ketones: 5 percent.

(b) A combination of aromatic compounds with eight or more carbon atoms to the molecule except ethylbenzene: 8 percent.

(c) A combination of ethylbenzene, ketones having branched hydrocarbon structures, trichloroethylene or toluene: 20 percent.
[A.A.C.R18-2-727.C]

(4) Whenever any organic solvent or any constituent of an organic solvent may be classified from its chemical structure into more than one of the groups of organic compounds described in Conditions XXV.B.1.a(3) above, it shall be considered to be a member of the group having the least allowable percent of the total volume of solvents.
[A.A.C.R18-2-727.D]

b. Monitoring and Recordkeeping Requirements

(1) Each time a spray painting project is conducted, the Permittee

shall make a record of the following:

(a) The date the project was conducted;

(b) The duration of the project;

(c) Type of control measures employed;

(d) Safety Data Sheets (SDS) for all paints and solvents used in the project; and

(e) The amount of paint consumed during the project.

(2) Architectural coating and spot painting projects shall be exempt from the recordkeeping requirements of Condition XXV.B.1.b(1) above.

[A.A.C. R18-2-306.A.3.c]

c. Permit Shield

Compliance with requirements of Condition XXV.B.1 above shall be deemed compliance with A.A.C.R18-2-727.

[A.A.C.R18-2-325]

2. Opacity

a. Emission Limitation/Standard

The Permittee shall not cause, allow or permit visible emissions from painting operations in excess of 20% opacity.

[A.A.C. R18-2-702.B.3]

b. Permit Shield

Compliance with requirements of Condition XXV.B.2 above shall be deemed compliance with A.A.C.R18-2-702.B.3.

[A.A.C. R18-2-325]

C. Demolition/Renovation - Hazardous Air Pollutants

1. Emission Limitation/Standard

The Permittee shall comply with all of the requirements of 40 CFR 61 Subpart M (National Emissions Standards for Hazardous Air Pollutants - Asbestos).

[A.A.C. R18-2-1101.A.12]

2. Monitoring and Recordkeeping Requirement

The Permittee shall keep all required records in a file. The required records shall include the "NESHAP Notification for Renovation and Demolition Activities" form and all supporting documents.

[A.A.C. R18-2-306.A.3.c]

3. Permit Shield

Compliance with requirements of Condition XXV.C above shall be deemed compliance with A.A.C. R18-2-1101.A.12.

[A.A.C. R18-2-325]

ATTACHMENT "C": EMISSION LIMITS

EMISSION SOURCES – MAXIMUM ALLOWABLE EMISSION RATES

Emission Point No.	Emission Source	Sulfur Dioxide		Particulate Matter		Lead	
		Pounds per hour	Tons per year	Pounds per hour	Tons per year	Pounds per hour	Tons per year
001	Acid Plant Tail Gas Stack	820.00	3515	20.40	87.67	0.10	0.44
002	Vent Fume Stack	312.00	1336	46.30**	198.70	24.80	105.30
003	Concentrate Bin Vent			0.08	0.32		
004	Concentrate Bin Vent			0.08	0.32		
005	Revert Bin			0.08	0.32		
006	Coal Bin			0.08	0.32		
007	Flux Bin			0.08	0.32		
	Fugitives *	1288	5517			10.38	44.45
	Totals	2420	10368				

* Fugitive emissions will not be subject to an individual emission limit. They will be regulated by the emission cap identified in the table.

** Alternatively, the Permittee must maintain a maximum 12-month rolling average stack flow rate of 500,000 scfm.

ATTACHMENT "D": SULFUR BALANCE METHODOLOGY

PROCEDURES FOR UTILIZING THE SULFUR BALANCE METHOD FOR DETERMINING SULFUR EMISSIONS

I. DETERMINATION OF SULFUR EMISSIONS FOR THE SMELTER AS A WHOLE SHALL BE SUBJECT TO THE FOLLOWING CONDITIONS:

A. The emission sum shall apply to all process sulfur emitted into the ambient air from smelter processing units and sulfur control and removal equipment associated with the smelting process. The total monthly amount of sulfur emissions is equal to the weight of the total sulfur introduced into the smelting process in any calendar month minus the weight of all sulfur removed from the smelting process streams in that month in any physical form, plus or minus the weight of the sulfur contained in any month-month decrease or increase necessary to indicate materials in process. Removed sulfur shall include but not be limited to sulfur contained in slag, blister copper, sulfuric acid, liquefied sulfur dioxide, elemental sulfur, flue dust, precipitator dust, acid plant sludge, scrubber effluent and absorption plant purge. All unremoved sulfur, including fugitive sulfur emissions, shall be considered as emissions to the ambient air.

B. Material balances for sulfur described in Condition II.A below shall be obtained in accordance with the procedures listed in this Appendix which are equivalent to Appendix 8 to A.A.C. Title 18, Chapter 2.

C. Average daily emissions are to be determined by dividing the total monthly emissions by the number of operating days in the particular month.

II. CALCULATING INPUT SULFUR

Total sulfur input is the sum of the product of the weight of each sulfur bearing material introduced into the smelting process as calculated in Condition II.A.1 below multiplied by the fraction of sulfur contained in that material as calculated in Condition II.A.2 below plus the amount of sulfur contained in fuel utilized in the smelting process as calculated in Condition II.A.3 below.

A. Material Weight

All sulfur bearing materials, other than fuels, introduced into the smelting process shall be weighed. Such weighing shall be subject to the following conditions:

1. Weight shall be determined on a belt scale, rail or truck scales, or other weighing device.

2. Weight shall be determined within an accuracy of ±5 percent.

3. All devices or scales used for weighing are to be calibrated to manufacturer's specifications. Scales will be calibrated at least quarterly. The weight of the railroad weight car shall be recorded following calibration of the railroad weight scale. Records of the quarterly truck scale calibrations and weekly railroad weight scale checks shall be retained and made available to regulatory personnel when requested.

4. Sulfur bearing materials subject to being weighed shall include but not be limited

to concentrate, cement copper, reverts which are discarded and not part of the internal circulating load, and precipitates. Materials such as limestone and silica flux which are mixed with a charge of sulfur bearing materials shall be weighed and reported.

B. Sulfur Content

The sulfur content of all sulfur bearing materials introduced into the smelting process shall be calculated using the following steps:

1. Sampling – The procedure to be followed in sampling is dependent upon the input vehicles for the sulfur bearing material.

   a. Railcar – The smelter operator shall collect a sample using the auger method. Two holes per car will be taken and combined with the total sample not exceeding 20 pounds. Ten cars or less from the same source will be combined into one lot.

   b. Truck – The smelter operator shall collect a sample using the auger method. Samples are to be taken from at least two points using the auger method and shall be representative of the contents of the truck. Shipments from other Freeport McMoRan mines may be sampled at the mine site provided each truckload is sampled. Samples will be combined at Miami into lots from trucks delivering material from the same source. For fluxes from Freeport McMoRan controlled mines, one truckload per day will be sampled.

2. Sample Preparation – Each total sample shall be prepared for analysis in the following manner:

   a. If necessary, the sample shall be crushed to minus quarter inch particles.

   b. Each sample is to be thoroughly blended in a roto-cone blender or similar device.

   c. A blended composite sample is to be prepared based on individual sample weight and moisture. Material to be used in the composite sample is to be cut with a sample scoop or knife and used to make a 2400 gram composite sample for each lot.

   d. Each composite sample is to be dried and then pulverized to minus 80 mesh using a roto-disc pulverizer or similar equipment and then blended in a roto-cone blender or similar equipment.

   e. A 200 gram portion is to be cut from the composite sample for analysis.

3. Sample Analysis.

   a. The sample shall be analyzed to determine sulfur content using any of the following methods:

      (1) X-ray Fluorescence Spectroscopy (XRF). The XRF shall be

calibrated using the Empirical Calibration method discussed in SW846 Method 6200 Section 10.3.

(2) Inductively Coupled Plasma Spectroscopy (ICP)

(3) Barium sulfate gravimetric test method (provided in Standard Methods of Chemical analysis, Volume One, The Elements, sixth edition, N. Howell Furman (ed.), D. Van Nostrand Company, Princeton, new Jersey, 1962, pages 410-411, 1006-1011, and 1342-1343 and no future editions or amendments).

b. The accuracy of sulfur analysis shall be within a range of ±1 percent

4. Sulfur Determination

The sulfur content of all feed material treated per month will be determined by month end physical inventories in conjunction with certified scales for bed contents. Physical inventory determines beginning and ending bed for each month and all beds processed during the month, together with inventory changes for secondaries. Based upon individual lot numbers for each material processed (i.e. concentrates, reverts, purchased secondaries, Resource Recycling material, and fluxes) the composite analysis will be used to determine sulfur input.

C. Fuel Sulfur Content

Sulfur in fuels shall be calculated by multiplying the amount of fuel delivered to the process by the fraction of sulfur in the fuel as reported to the smelter operator by the fuel's supplier. The sulfur content determination shall be accurate to within ±5 percent. The sulfur content of "pipeline quality natural gas" meeting the definition in 40 CFR 72.2 does not have to be accounted for due to its low concentration. The Permittee shall maintain documentation of the total sulfur content of the natural gas from its supplier. The sulfur content of other fuels, such as coal or diesel fuel shall continue to be determined as required by this paragraph.

III. CALCULATING REMOVED SULFUR

Total removed sulfur is the sum of the sulfur removed in each of the following products as determined by each process set forth below.

A. Electric Furnace Slags

1. The weight of the slag shall be determined using a count of furnace slag ladles. The weight used for slag in slag ladles will be checked on a semi-annual basis by taking samples from 5 ladles determining the average density of the slag using a method which has an accuracy within 5%.

2. Each slag pot will be sampled and a portion of each crushed sample will be used to form a monthly composite sample which will be analyzed for sulfur using ICP.

B. Scrubber Sludge

1. For sludge that is collected (as a slurry), clarified, and filtered before transportation

to a solar drying pad as a sludge, a truck payload weight will be determined. The sludge will be sampled each time a truck is filled. The sample will be prepared and analyzed for sulfur using the procedures in Conditions II.B.2 and 3 above.

2. If sludge is to be recycled back to the smelter, the sludge will be sampled each time a truck is filled. The sample will be prepared and analyzed for sulfur using the procedures in Conditions II.B.2 and 3 above.

C. Strong Acids

1. The daily production of acid shall be determined by using either a flowmeter which measures all acid added to the storage tanks from which trucks or rail cars are loaded, or a daily inventory increased by the amounts of acid shipped or otherwise transferred during that day.

2. The meter reading or daily inventory will be accurate to within ±5 percent.

3. Strong acid samples will be analyzed for sulfuric acid using specific gravity methods corrected for temperature. Sulfuric acid analyses will be converted to grams per liter of sulfur.

4. The acid stream will be sampled twice per shift and specific gravity will be measured by hydrometer in accordance with Freeport McMoRan SOP-45-0012 to check sensor accuracy. If the sensor reading differs from the hydrometer reading by more than 5%, the instrument will be recalibrated if possible or replaced.

5. All flow meters, density gauges, sonic sensors, pressure sensors, etc., used in determining the sulfur balance will be calibrated according to manufacturer's specifications at least quarterly.

D. Weak Acids

1. The amount of weak acid discharged from the acid plant and scrubber systems is to be determined through flow meters.

2. Flow meters will be calibrated as in Condition III.C.5 above. The accuracy is to be within +/- 20%.

3. A 100 ml sample of weak acid shall be collected and analyzed daily for sulfur content using Inductively Coupled Plasma Spectroscopy or the Barium Sulfate Gravimetric Method specified in A.A.C. R18-2 Appendix 8.

E. Materials in Process

1. Total tonnage of materials in process shall be determined by physical inventory on the first day of each month.

2. A monthly change of in-process inventory shall be calculated for each material in process by taking the difference between the inventories from each material in process on the first day of the preceding month and multiplying that difference by the monthly composite sulfur assay for that material.

3. The change of monthly in-process inventory must be accurate to within ±50 percent.

ATTACHMENT "E": FUGITIVE DUST CONTROL PLAN

The Permittee shall operate as per the approved fugitive dust control plan. An existing fugitive dust control plan is considered to be approved if the plan has been incorporated in the applicable State Implementation Plan, and the document addresses the fugitive dust sources specified in Condition I.A below and includes the information specified in Condition I.B below.

I. FUGITIVE DUST SOURCES

A. The fugitive dust control plan shall address each of the fugitive dust emission sources listed below that are located at the facility:

1. On-site roadways used by trucks or other motor vehicles (e.g., front-end loaders) when transporting quantities of fugitive dust materials. Paved roads and parking areas that are not used by these vehicles do not need to be included in the plan (e.g., employee and visitor parking lots).

    a. Unloading of fugitive dust materials from trucks or railcars.

    b. Outdoor piles used for storage of fugitive dust materials.

    c. Bedding areas used for blending copper concentrate and other feed constituents.

    d. Each transfer point in conveying systems used to transport fugitive dust materials. These points include, but are not limited to, transfer of material from one conveyor belt to another and transfer of material to a hopper or bin.

    e. Other site-specific sources of fugitive dust emissions that the Administrator or the Director designate to be included in your fugitive dust control plan.

B. The fugitive dust control plan shall describe the control measures used to control fugitive dust emissions from each source addressed in the plan, as applicable and appropriate for the Permittee's site conditions. Examples of control measures include, but are not limited to, locating the source inside a building or other enclosure, installing and operating a local hood capture system over the source and venting the captured gas stream to a control device, placing material stockpiles below grade, installing wind screens or wind fences around the source, spraying water on the source as weather conditions require, applying appropriate dust suppression agents on the source, or combinations of these control measures.

ATTACHMENT "F": EQUIPMENT LIST

Description	Capacity	Manufacturer	Model/ Serial Number	Equipment # Miami	Plant #	Installed
ROD PLANT						
Shaft Furnace 15-burners	24 tons per Hr	Asarco	N/A	12254	MIR1030	Pre-1970
Holding Furnace 1-burner	10 tons capacity	Lindberg	N/A	12291	MIR1050	Pre-1970
Casting Structure (SCR)	84-inch wheel	Southwire	N/A	12350	MIR1060	Pre-1970
Roughing Mill	24 ton/hr	Morgan Mills	N/A	N/A	MIR134	Pre-1970
Finish Mill	24 ton/hr	Morgan Mills	N/A	N/A	MIR133	Pre-1970
Pickling System	24 ton/hr	Southwire	N/A	12459	MIR3010	Pre-1970
Coiler	24 ton/hr	Morgan mills	N/A	12348	MIR1097	Pre-1970
Thermal Breaker	0.82 MMBtu/hr	Fulton Thermal Corp.	FT-0080-C	12690	MIR8567	1984
Rod Plant Cooling Tower	2500 gpm	Flour	Counter Flow 1F60H-126-2424	12472	MIR3500	Pre-1970
Alcohol Tank #1	8000 gallons	Unknown	N/A	12456	MIR3007	1984
Alcohol Tank #2	8000 gallons	Unknown	N/A	12465	MIR3016	1984
Used Oil Tank #3	8000 gallons	Unknown	N/A	12458	MIR3009	1984
Used Oil Tank #4	8000 gallons	Unknown	N/A	12461	MIR3012	1984
ELECTROLYTIC REFINERY (685 Cells)						
Natural-gas fired Steam Boiler	16.7 MMBtu/hr	Johnston Boiler Co.	PFTA 400-4G-150S S/N 916301-01	10243	MIE10BR001A	1994
Natural-gas fired Steam Boiler	16.7 MMBtu/hr	Johnston Boiler Co.	PFTA 400-4G-150S S/N 916301-02	10244	MIE10BR001B	1994

Description	Capacity	Manufacturer	Model/ Serial Number	Equipment # Miami	Plant #	Installed
Anode Wash Machine Demister	13,600 scfm	AISCO	94-1065	10469	MIE20SK003	1994
Cathode Wash Machine Demister	2000 scfm	TM Engineers	9123	10470	MIE20SK005	1994
Decant Scrubber System #1	5300 scfm	Carbotech	HRP43-48	10533	MIE20SK006	1994
Decant Scrubber System #2	5300 scfm	Carbotech	HRP43-48	10544	MIE20SK007	1994
Autoclave Scrubber	3500 scfm	Carbotech	HRP43-48	10705	MIE20SK001	1994
Slimes Dryer Baghouse	175 scfm	Flex-Kleen	36BVBC9	10685	MIE30BH001	1994
Prep Machine Cyclone		Hoffman Centrifugal Exhauster	MT2B06 TVAC200	10468	MIE20MA001	1994
Sulfuric Acid Tank	6000 Gallons	N/A	N/A	10402	MIE10TK042	1994
SMELTER						
IsaSmelt® Furnace 12 ft	1.2 MMTPY Nominal/ year	Mt. Isa	#2	14023	MISISA30040	1991
IsaSmelt® Furnace 15 ft	1.2 MMTPY Nominal/ year	TBD	TBD	TBD	TBD	TBD
Startup/ holding burner for IsaSmelt® Vessel	30 MMBtu/hr	North American	MISIVB	14032	MISISA30040	1991
Natural-gas fired IsaSmelt® Auxiliary Boiler	10.4 MMBtu/hr	Vapor Corp.	HS2-H8500-VHK300 HS2H85	13959	MISISA00385	1991
Natural-gas fired Change Room Boiler	0.745 MMBtu/hr	Lochinvar	KO8H00214490	NA	NA	1997
Electric furnace	3100 tons	Elkem	N/A	10309	MISELEFURNACE	1974

Description	Capacity	Manufacturer	Model/ Serial Number	Equipment # Miami	Plant #	Installed
#1 (Inspiration) converter	200 Tons	Inspiration	N/A	10277	MISCONVETER1	1981
Hoboken Converter #2	130 tons	Hoboken	N/A	10278	MISCONVETER2	1974
Hoboken Converter #3	130 tons	Hoboken	N/A	10279	MISCONVETER3	1974
Hoboken Converter #4	130 tons	Hoboken	N/A	10280	MISCONVETER4	1974
Hoboken Converter #5	130 tons	Hoboken	N/A	10281	MISCONVETER5	1974
Anode Vessel #1	150 TPY	Pierce-Smith	N/A	13292	MISC0555.1	1987
Anode Vessel #2	150 TPY	Pierce-Smith	N/A	13293	MISC0555.2	1987
Hydrated Lime Silo	4000 ft^3	Clyde Bergeman	4400641-SP-004	100001055925	707SC0640BN051	2017
Anode Furnace Baghouse	300,000 SCFM	Clyde Bergeman	PJFF	100001055910	707SC0640BH060	2017
Aisle Scrubber	1.7 MMSCFM	AMECFW	NA	100001055819	707SC0820SR001	2017
Remelt/Mold pouring furnace	250 Tons	Pierce-Smith	N/A	13357	MISC0610.18	Pre-1974
Future Utility Vessel	TBD	TBD	TBD	TBD	TBD	TBD
Acid Plant Pre-heater	34 MMBtu/hr	North American	MIC201	12790	MISAC201	1997
Acid Plant	TBD	N/A	N/A	TBD	MISACIDPLANT	TBD
Dust Collector, Flux Bin	1,000 acfm	Donaldson	16PJD6	14016	MISISA20130	1991
Dust Collector, Coal Bin	1,000 acfm	Donaldson	16PJD6	14017	MISISA20131	1991

Description	Capacity	Manufacturer	Model/ Serial Number	Equipment # Miami	Plant #	Installed
Dust Collector, Reverts Bin	1,000 acfm	Donaldson	16PJD6	14018	MISISA20132	1991
Dust Collector, Conc. Bin 040	3,000 acfm	Donaldson	16PJD8	14019	MISISA20133	1991
Dust collector, Conc. Bin	3,000 acfm	Donaldson	16PJD8	14020	MISISA20134	1991
Dust Collector, Anode Furnace Bin	TBD	TBD	TBD	TBD	TBD	TBD
Dust Collector, Hydrated Lime Bin	TBD	TBD	TBD	100001055926	707SC0640BN053	2017
Vent Fume Scrubber	300 Kscfm	Airpol	N/A	13884	MISF45032	1991
Vent Fume Wet Electrostatic Precipitator #1	100 Kscfm	Beltran	BTP-10x17.5	826254	MISFWESP.01	2003
Vent Fume Wet Electrostatic Precipitator #2*	100 Kscfm	Beltran	BTP-10x17.5	826258	MISFWESP.02	2003
Vent Fume Wet Electrostatic Precipitator #3*	100 Kscfm	Beltran	BTP-10x17.5	826259	MISFWESP.03	2003
Vent Fume Wet Electrostatic Precipitator #4-8	300K SCFM	Lundburg	E-Tube	100000826254 / 100001055947	707SFWESP01 / 707SFWESP810	2017
Acid Plant Tail Stack Scrubber	140 Kscfm	Airpol	N/A	13086	MISA60050	1991
Sulfuric Acid Tank #1	2,000 Gallons	N/A	N/A	13025	MISAT3011	1974
Sulfuric Acid Tank #2	2,000 Gallons	N/A	N/A	13024	MISAT3012	2005

Description	Capacity	Manufacturer	Model/ Serial Number	Equipment # Miami	Plant #	Installed
Sulfuric Acid Tank #3	2,000 Gallons	N/A	N/A	13022	MISAT3013	1974
Sulfuric Acid Tank #4	2,000 Gallons	N/A	N/A	13023	MISAT3014	1974
Sulfuric Acid Tank #5	10,000 Gallons	N/A	10,000 tons	837208	707SAT3015	2005
Sulfuric Acid Tank #6	10,000 Gallons	N/A	10,000 tons	837209	707SAT3016	2005
"A" Cooling Tower	4,500 gpm	Ecodyne	N/A	13026	MISAT401A	1974
"B" Cooling Tower	6,500 gpm	Ecodyne	E60-12076	13027	MISAT401B	1970 modified in 1985
"C" Cooling Tower	16,500 gpm	Ecodyne	N/A	13035	MISA00750	1992
"E" Cooling Tower	5,600 gpm	Ecodyne	2- 24x24 cells	31200	MISF210	1997
"D" Cooling Tower (Not in service)		Unknown	N/A	13016	MISAT1005	1978
"F" Cooling Tower	9500 gpm	Midwest Towers	NA	707SAF310	NA	2008
Mastermag Electromagnetic Head Pulley	100 TPH	KAFKA	Model # 24 EPH 6, Serial # M.16112C	839969	707S1003	June 2005
Gasoline Storage tank	12,000 gallons	N/A	N/A	N/A	100000905478	Pre-1986
Caustic Receiving Tank	28,000 gallons	NA	NA	707SCU0830TK001	TBD	2017
Caustic Dilution Tank	84,450 gallons	NA	NA	707SCU0830TK0014	TBD	2017
ENGINES NOT SUBJECT TO NSPS REQUIREMENTS						
Screening Machine with Diesel Engine	63 HP	Finlay	59B	FD480322	N/A	Post 1998

Description	Capacity	Manufacturer	Model/ Serial Number	Equipment # Miami	Plant #	Installed
Diesel Fired Emergency Generator/Engine (Uptake Hood Back up Circulation Pump)	149 KW (200 HP)	Caterpillar	NT855	100000014262	707S112	1992
NEW CI ENGINES SUBJECT TO NSPS SUBPART IIII						
Diesel Emergency Engine (IsaSmelt®)	789 HP	Cummins	1000DQFAH / L140770531	100001040476	707SGEN2	2014
Diesel Feed Water Pump	450 HP	TBD	TBD	TBD	TBD	TBD
Diesel Emergency Engine (Converters)	1,150 HP	Caterpillar	DM8867/ CAT00C27LT4Z00235	707SGEN1	100000963564	2013
Diesel Fired Emergency Generator/Engine (Hwy 60 Comm. Office)	100 KW (134 HP)	Cummins	100 SDGAA/ F110225761	707ISGEN1	100000952325	2011
Diesel Fired Emergency Generator/Engine (Moonshine Hill)	20 KW (27 HP)	Cummins	20 DSKBA/ F110225182	707ISGEN3	100000952327	2011
Diesel Fired Emergency Generator/Engine (Radio Tower)	50 KW (67 HP)	Cummins	50DSFAC/ K110272139	707ISGEN2	100000957609	2011
Diesel Fired Emergency Generator/Engine (Smelter Guard house)	35 KW (47 HP)	Cummins	35DSFAA/ L110287112	707ISGEN4	100000957608	2011
Diesel Fired Emergency Generator/Engine (Main Server Room)	300 KW (402 HP)	Cummins	300 DQDAC/ E130497478	707ISGEN5	100000989873	2013

Description	Capacity	Manufacturer	Model/ Serial Number	Equipment # Miami	Plant #	Installed
Air Compressor engine	Less than 500 HP	SullAir	1600HAFDTQ	707S1274	201111100009	2011
Air Compressor engine	Less than 500 HP	SullAir	1600HAFDTQ	707S1275	201111100086	2011
Diesel-fired Strom Water Pump (Rod Plant)	129.6 KW	Perkins	PJ38440/U0143935	100000893354	100000893354	2015
Flag pole Emergency Genset	8.9 KW	Kubota	DA7000SSA/3858850	707ISGEN6	707ISGEN6	2015
Bypass Stack Emergency Genset	80 KW	Caterpillar	D80-6	TBD	TBD	TBD
NEW SI ENGINES SUBJECT TO NSPS SUBPART JJJJ						
Emergency Generator	128 kW (172 HP)	Kohler	195REZG/2417206	100001039265	100001039265	TBD
Emergency Generator	128 kW (172 HP)	Kohler	195REZG	TBD	TBD	TBD
BOILERS AND HEATERS SUBJECT TO NESHAP SUBPART DDDDD						
Thermal Breaker	0.82 MMBtu/hr	Fulton Thermal Corp.	FT-0080-C	12690	MIR8567	1984
Natural-gas fired Steam Boiler	16.7 MMBtu/hr	Johnston Boiler Co.	PFTA 400-4G-150S S/N 916301-01	10243	MIE10BR001A	1994
Natural-gas fired Steam Boiler	16.7 MMBtu/hr	Johnston Boiler Co.	PFTA 400-4G-150S S/N 916301-02	10244	MIE10BR001B	1994
Natural-gas fired IsaSmelt® Auxiliary Boiler	10.4 MMBtu/hr	Vapor Corp.	HS2-H8500-VHK300 HS2H85	13959	MISISA00385	1991
Acid Plant Pre-heater	34 MMBtu/hr	North American	MIC201	12790	MISAC201	1997

Description	Capacity	Manufacturer	Model/ Serial Number	Equipment # Miami	Plant #	Installed
ON-SITE CONTRACTOR CRUSHING & SCREENING OPERATIONS SUBJECT TO NSPS SUBPART OOO						
Cone Crusher	250 Tons per hour	Svedala	H4000/ 15A081	KES-CC1-SIL		1990
Jaw Crusher	250 Tons per hour	Cedarapids	30 x 54/J0307-6430	KES-JC1-SIL		2007
Cone Crusher	250 Tons per hour	Sanvich	H4800/ 5410201	KES-CC2-SIL		2005
Screen	250 Tons per hour	JCI	Twin, 6x20/98482	KES-S1-SIL		1988
Screen		Telesmith	2213			
ON-SITE CONTRACTOR CRUSHING & SCREENING OPERATIONS SUBJECT TO A.A.C. R-18-2-721						
Jaw Crusher	200 Tons per hour	Lippman	24x36/ 2007-08144-2436	KES-JC1-REV		2005
Jaw Crusher	200 Tons per hour	Lippman	42x48/ 2005-0342-24364248	KES-JC2-REV		2005
Screen	200 Tons per hour	Simplicity	6x16/ 2616-M120B-5644	KES-S1-REV		2005

Note: The prefix "707" may be also be used in place of "MI" for the entries in the column titled "Plant #" in the above table.

N/A: Not available

TBD: To be decided